Advant® OCS
with Master software

Data Base Elements
Advant® Controller 160

Reference Manual

3BDS 005 556R101

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Introduction

This chapter is an introduction to data sheets for data base elements in Advant Controller 160.

Overview

Advant Controller 160 is a Programmable Logic Controller (PLC) system for industrial processes. The system provides a PC programming language and a data base element concept.

The data base elements provide a software concept for the representation of

- The following hardware modules:
  - The processor (CPU) module
  - The process I/O modules and their subordinated signals
  - The communication modules.
- Common data (DAT/PARDAT)
- The transfer of common data from/to other controllers via Data Sets (DSP) or MVI Data Blocks (MVB)
- The transfer of event data via Event Set Send (EVS(S)) or Event Set Transit (EVS(T))
- The transfer of data between processor modules via High Speed Link Rcv (HSLR) and High Speed Link Snd (HSLS).

In Advant Controller 160 there is a common data area within the target system for the DAT and PARDAT data base elements. There are a common data extended area and a common data event queue area for further internal data (see Table 10). Control modules (CONTRM, …) read and write the other process values directly from/to the related I/O modules connected via the backplane I/O bus.

The data base elements for Advant Controller 160 fulfil three main tasks:

1. They represent process signals, including error signals connectable to PC programs
2. They show configuration data for the initialization of I/O modules or common data area elements.
3. They include descriptions belonging to the data base element (names, …)

Data Sheets for Data Base Elements

This description contains the data sheets for all data base elements available for Advant Controller 160.

You can use the information in the data sheets for two purposes:

1. To interpret the meaning of the data viewed in element pictures on the Engineering Station.

2. To check available data types, values and ranges for your modifications of the element contents.

Contents of a Data Sheet for Data Base Elements

Head of the Data Sheet

The head of a data sheet shows in the upper right corner the call name(s) of the element(s) and in the upper left corner the data base element type.

Figure 1. Example of Head

Element Type

The element type gives a short description of the data base element. For data base elements of type module or signal the first two characters correspond to the first two characters of the hardware ID.

Call Name

The call name of a data base element describing modules and signals corresponds to the ID of the related modules (for example AI610). For other elements the call name is equal to the element name or is a short mnemonic of the element name.

On an Engineering Station you create a data base element instance by entering the element’s call name. Note that some elements are automatically created with others. Their call names can not be used for creation.

Summary

The summary provides a brief description of the element(s).

AI610 is a module for handling of analog input signals.

By means of the call name AI610 an Engineering Station will create:

•1 data base element of type AI module

•32 data base elements of type Analog Input.

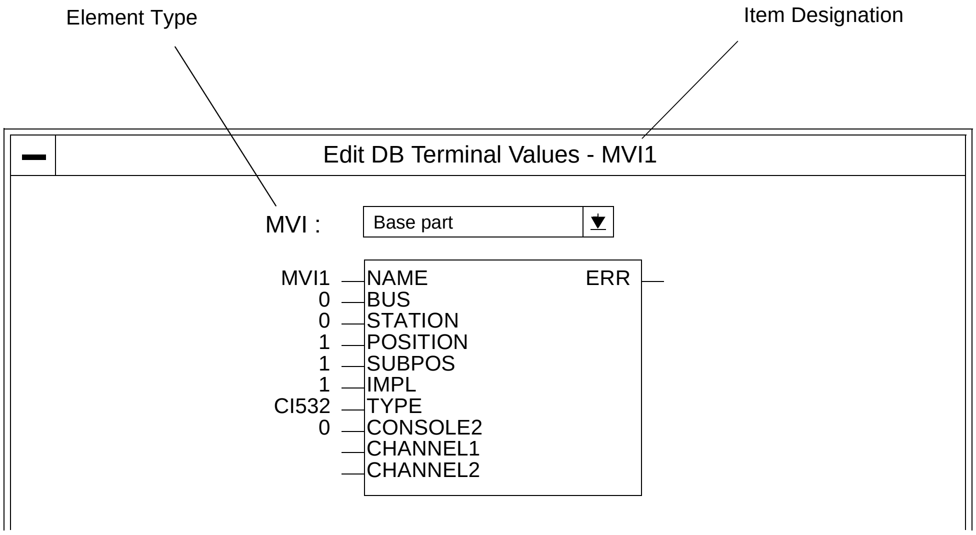
Figure 2. Example of Summary

Picture

The picture shows the element in the same way as it is displayed on the Engineering Station.

The symbol on the top middle of the display shows the header part with the element type.
A graphic symbol that looks like a PC element is shown below it.

Simple data base elements consist of one single graphic symbol, whereas more complex elements are split into several graphic symbols. Each symbol has a name that is listed in the header part and the symbol shown below it corresponds to the currently selected name. The data sheet of data base elements with more than one symbol start with an overview picture including all symbols. This overview picture cannot be displayed on the Engineering Station.


Element Type

Item Designation

Edit DB Terminal Values - MVI1

MVI : Base part

MVI1 — NAME
0 — BUS
0 — STATION
1 — POSITION
1 — SUBPOS
1 — IMPL
CI532 — TYPE
0 — CONSOLE2
— CHANNEL1
— CHANNEL2
ERR —

Figure 3. Example of Picture

In Advant Controller 160 the graphic symbol of a data base element has the following general representation:

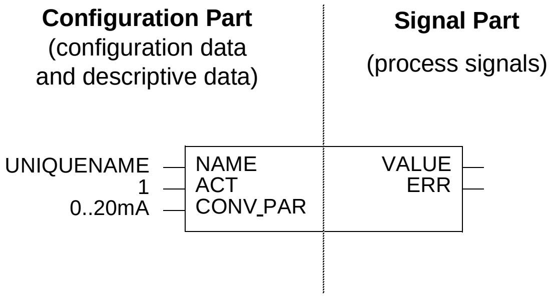


Figure 4. General Representation

Graphic Symbol

The graphic symbol is a box with terminals representing each data value. Configuration and descriptive data are shown to the left, process signals to the right. The names inside the picture are terminal names to identify the data. They are used for connections of PC elements to data base elements. VALUE is the default name when connecting. The configuration and description data is entered outside the box at the terminal names.

Item Designation

A unique identification of a module is given by the contents of the terminals BUS, STATION, POSITION and SUBPOS. The signals on each module have running numbers beginning with 1.

Each element is created with a unique item designation that is used to identify it. For some elements the item designation equals to the call name plus a consecutive number. For other elements a common type of item designations is used. Normally a group of similar elements will have the same type of item designation. For instance the data base element with item designation AIx.y corresponds to the y:th analog input signal of the x:th Analog Input module.

Terminals

The terminal table presents detailed information concerning the properties of each data base element terminal.

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	MVIx	–	Unique module **NAME.**	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See section “Address terminals” below.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the carrier module.	
SUBPOS	user	0	–	**SUB**module **POS**ition in the carrier module. Values: 0 (not specified), 1, 2	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI532	–	Module **TYPE.**	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

1 2 3 4 5 6

Figure 5. Example of Terminals

1. **Terminal name**.
   Each available property in the element has its own terminal with a terminal name. The terminal name is unique within the element.

2. **Value entered by**.
   This column describes whether it is up to you or the system to enter values on this terminal.

   user means that a user specified value usually should be entered by Engineering Station.

   system means that the value of this terminal is updated by the system.

   predef means that the value of this terminal has been predetermined and is already present in the system. A predefined value can not be changed by the user.

   PC means that a PC element is usually connected to this terminal.

3. **Default value**.

4. **PC connection data type**.
   If a PC programs can read a data base terminal, this is indicated with ***(r)***. If it can read and write to it, this is indicated wit ***(r/w)***. The data type is one of the following:

B	for Boolean
I	for Integer (16 bits)
IL	for IntegerLong (32 bits)
R	for Real

5. **Description**.
   A short description of the terminal and a list of terminal values.

6. **Remarks**.
   Short notes about restrictions, limitations, ranges, etc.

Address terminals

The Advant Controller 160 can interface a large number of different objects, such as hardware modules, stations, controllers and I/O modules. Since the hardware modules, stations, controllers and I/O modules perform different functions and some of them can exist in multiple copies, there has to be a way to uniquely address one object.

Each *hardware module data base element* has to be given a unique address. The address comprises the terminals BUS, STATION, POSITION to exactly specify the unique hardware module performing the function. Hardware modules to be inserted in a Carrier Modules additionally contain the SUBPOS terminal.

S600 I/O modules

- The **BUS** terminal is not used and always set to 0.
- The **STATION** terminal is not used and always set to 0.
- The **POSITION** terminal specifies the position (physical slot) in the Advant Controller 160 rack or in one of its I/O sub-stations. The value of the POSITION terminal is calculated as the I/O sub-station number (1 to 7) or 0 for the controller rack, multiplied by 100 plus the position in the rack (1 to 20).

  Examples:

  POSITION = 213 refers to an I/O module in sub-station 2 on rack position 13.
  POSITION = 11 refers to an I/O module in the controller rack itself at position 11.

S800 I/O modules

Advant Controller 160 interfaces S800 I/O stations and S800 I/O modules on Advant Fieldbus 100 or PROFIBUS.

- The **BUS** terminal refers to the bus number specified in the Advant Fieldbus 100 Communication Interface module (for example CI630) or in the PROFIBUS Interface module CI830.
- The **STATION** terminal specifies a unique station on the bus given in terminal BUS.
- The **POSITION** terminal specifies the position of an S800 I/O station in one of its clusters. The value of the POSITION terminal is calculated as the cluster number (1 to 7) or 0 for the base I/O station, multiplied by 100 plus the position in the station (1 to 12), or 0 for the Communication Interface module for Advant Fieldbus 100, e.g. CI810, or PROFIBUS Interface module CI830.

  Examples:

  POSITION = 209 refers to an I/O module in I/O cluster 2 at position 9.
  POSITION = 10 refers to an I/O module in the I/O station itself at position 10.

S500 I/O submodules

S500 I/O modules are plugged in a carrier module, for example SC610, or in a processor module. A Submodule address has an additional terminal

- **SUBPOS**, the position of the submodule in the carrier module (1 or 2).

NOTE

These four terminals can not be changed on-line.

BUS = 0, STATION = 0, POSITION = 0, SUBPOS = 0 means: Actual address is not specified. However, it has to be specified before generating target code.

Advant Controller 160 Process Station

Base Station

Position:	1	2	3	4	5	6	7	8	9	10
	CI630	CI630	PM645	PM645	DI610	DI610	DI610	DI610	CI615	CI615
	DI610	DI610	DI610	DO610	DO610	DO610	DO610	AI630	AI630	AO610
Position:	11	12	13	14	15	16	17	18	19	20

I/O Station 1

Position:	1	2	3	4	5	6	7	8	9	(10)
	CI610	CI610	DI610	DI610	DI610	DI610	DI610	DI610	DI620	SA610
	DI610	DI620	DI650	DO610	DO610	DO620	DX610	AI610	AI635	AO620
Position:	11	12	13	14	15	16	17	18	19	20

I/O Station 2

•

•

•

NOTE

The power supply SA610 is not represented by a data base element.

Figure 6. Example of an Advant Controller 160 Process Station

S800 via PROFIBUS

S800 I/O modules can not only be connected remotely to Advant Controller 160 via Advant Fieldbus 100 using Communication Interface CI810 or CI820, but also via PROFIBUS-DP using Communication Interface CI830.

In both cases the S800 I/O modules are the same. The only difference is the Communication Interface: CI810 or CI820 for Advant Fieldbus 100 connection, CI830 for PROFIBUS connection.

To configure S800 I/O connected via PROFIBUS-DP, two methods are available.

1. Generate a new set of Data Base elements for S800 I/O with the Profibus Library Editor (PLE) and the corresponding GSD files (not recommended). See *Profibus Library Editor Version 4.7 User's Guide 3BDS100585R1* for details.In this case you need additionally the *Reference Manual S800 I/O PROFIBUS FCI, Memory Maps for CI830 3BSE019081R101*.
2. Use the Data Base elements for S800 I/O included in option "OPT7: S800 via PB" (recommended). You now can configure S800 I/O connected to PROFIBUS-DP in the same way as for remote S800 I/O connected via Advant Fieldbus 100.

WARNING

Do not mix the two methods of using S800 I/O via PROFIBUS. Use the recommended method 1 and option OPT7: S800 via PB.

However, there are some differences between the S800 I/O Data Base elements for PROFIBUS-DP and the S800 I/O Data Base elements for Advant Fieldbus 100.

General Differences S800 I/O for PROFIBUS and Advant Fieldbus 100

Modules connected to PROFIBUS are configured using User Parameter Data (UPRM) data and Configuration Data (CFG) . Each DB element includes therefore windows called *User_Prm_Data* and *Cfg_Data*.

Process terminals, the PC connectable terminals, are located in S800 I/O DB elements for Advant Fieldbus 100 in the DB element window named *Base part*. In S800 I/O DB elements for PROFIBUS these terminals are located in a separate DB element window named *Process Values*.

Some I/O configuration which is done by specific terminals of S800 I/O DB elements for Advant Fieldbus 100 has to be done for S800 I/O DB elements for PROFIBUS by changing user parameter (UPRM) data, see Chapter .

The terminal IMPL (default value 1) is included in S800 I/O DB elements for PROFIBUS for compatibility reasons only, the functionality is not supported.

The terminal ACT (default value 1) is included in S800 I/O DB elements for PROFIBUS for compatibility reasons only, the functionality is not supported. Instead the pc connectable terminal ACTIVE has to be used.

Activation of channels

The channels of the S800 I/O modules connected via PROFIBUS are in passive state by default.

To activate a channel, connect its terminal ACTIVE in the PC section to the constant value 1. It is recommended to do that in the initialization task of the PC program, i.e. by using a CONTRM with the specific callparameter value C2 = 252. This should be done for all channels in the same way.

Example in FCB for DI channels

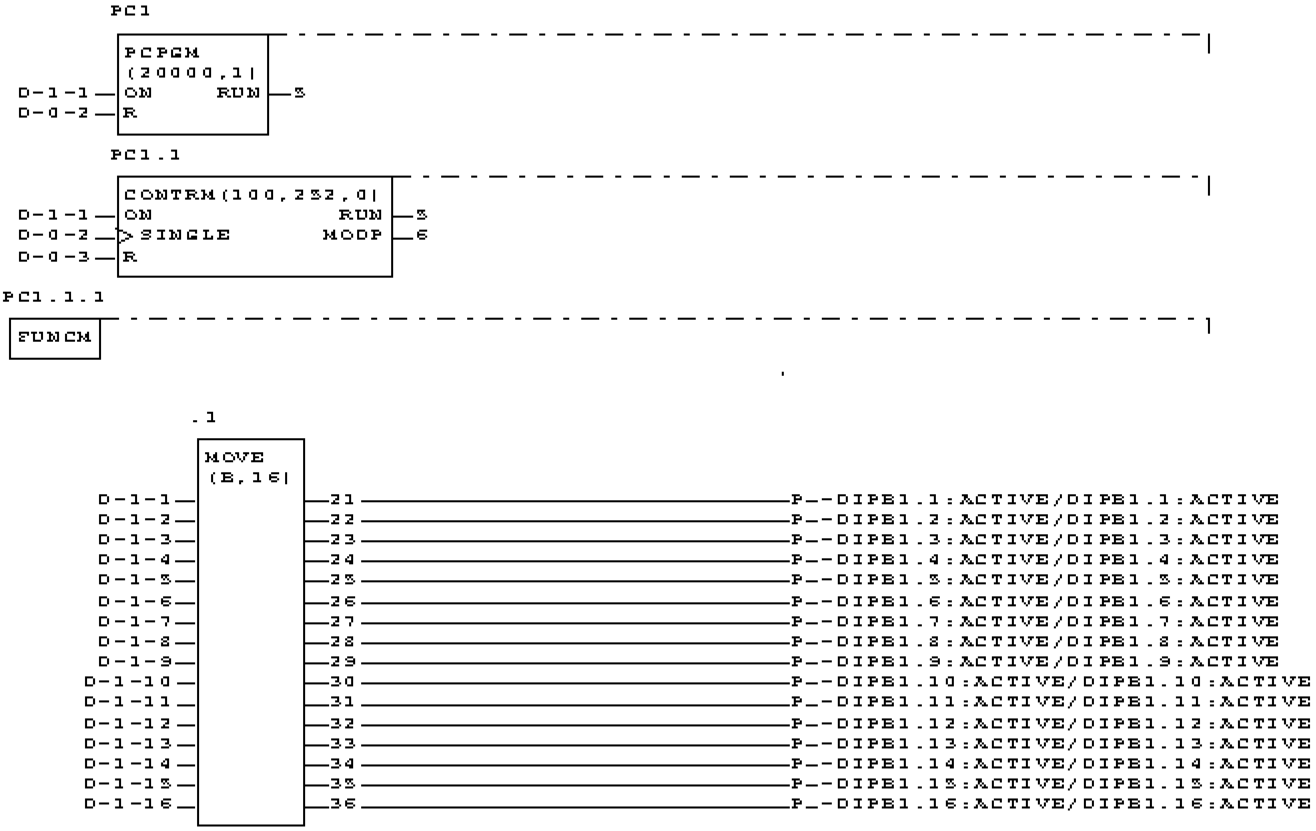

PC1
PCPGM
(20000,1)
D-1-1 ON RUN 5
D-0-2 R
PC1.1
CONTRM(100,252,0)
D-1-1 ON RUN 5
D-0-2 SINGLE MODP 6
D-0-3 R
PC1.1.1
FUNCM
.1
MOVE
(B,16)
D-1-1 21 P--DIPB1.1:ACTIVE/DIPB1.1:ACTIVE
D-1-2 22 P--DIPB1.2:ACTIVE/DIPB1.2:ACTIVE
D-1-3 23 P--DIPB1.3:ACTIVE/DIPB1.3:ACTIVE
D-1-4 24 P--DIPB1.4:ACTIVE/DIPB1.4:ACTIVE
D-1-5 25 P--DIPB1.5:ACTIVE/DIPB1.5:ACTIVE
D-1-6 26 P--DIPB1.6:ACTIVE/DIPB1.6:ACTIVE
D-1-7 27 P--DIPB1.7:ACTIVE/DIPB1.7:ACTIVE
D-1-8 28 P--DIPB1.8:ACTIVE/DIPB1.8:ACTIVE
D-1-9 29 P--DIPB1.9:ACTIVE/DIPB1.9:ACTIVE
D-1-10 30 P--DIPB1.10:ACTIVE/DIPB1.10:ACTIVE
D-1-11 31 P--DIPB1.11:ACTIVE/DIPB1.11:ACTIVE
D-1-12 32 P--DIPB1.12:ACTIVE/DIPB1.12:ACTIVE
D-1-13 33 P--DIPB1.13:ACTIVE/DIPB1.13:ACTIVE
D-1-14 34 P--DIPB1.14:ACTIVE/DIPB1.14:ACTIVE
D-1-15 35 P--DIPB1.15:ACTIVE/DIPB1.15:ACTIVE
D-1-16 36 P--DIPB1.16:ACTIVE/DIPB1.16:ACTIVE

Figure 7. Activate DI Channels in the INIT task of FCB

I/O Configuration in UPRM Data

The values of UPRM data for each module are located in the Data Base element window *User_Prm_Data*. In most cases the UPRM data is included at the module DB element only. Channel specific UPRM data can only be divided to the channel elements if they have a length of one byte (or a multiple) for every channel, e.g. PB_AO810S.

The UPRM data includes information used for I/O configuration. In S800 I/O DB elements for Advant Fieldbus 100 this information can be set by DB element terminals. These terminals are not available at the S800 I/O DB elements for PROFIBUS, here the information can be set only by changing the terminal value of UPRM*n*.

The UPRM data are specified as hexadecimal values, 2 digits for each bytes. The 8 bits in each byte are numbered from bit 0 to bit 7 see Table 7-1. The numbering starts with byte 1. The configuration part of UPRM data starts for all I/O module types with byte 4.

Table 7-1. User Parameters

Bit number								**Byte number**
7	**6**	**5**	**4**	**3**	**2**	**1**	**0**	
								Byte 1
								Byte 2

Analog Process Values

Analog process values are coded according to the table below.

Table 1. Coding of Analog Process Values

Nominal range		**Min. underrange**		**Max. overrange**	
Physical	**16-bit integer**(1)	**Physical**	**16-bit integer** (1)	**Physical**	**16-bit integer** (1)
0…10 V 0…5 V 0…20 mA	0…28480 (0…100%)	None (0 V) None (0 V) None (0 mA)	0 (0%)	11.5 V 5.7 V 23 mA	32704 (114.8%)
-10…10 V -5…5 V -20…20 mA	-28480…28480 (-100…100%)(2)	-11.5 V -5.7 V -23 mA	-32704 (-114.8%)	11.5 V 5.7 V 23 mA	32704 (114.8%)
2…10 V 1…5 V 4…20 mA	0…28480 (0…100%)(3)	None (0 V) None (0 V) None (0 mA)	-7120 (-25%)	11.2 V 5.6 V 22.4 mA	32704 (115%)

(1) 15 bits + sign bit
(2) Percentage of the maximum positive range, that is, 0 % means 0 V or 0 mA.
(3) Percentage of the signal range, that is, 0 % means 2 V, 1 V or 4 mA, respectively.

General Notes and Limitations

Name Limitations

Names of data base element instances may include most characters except space ‘ ’. Generally the maximum length of a name is 20 characters, but some elements may have further restrictions stated in the list of terminals. If no name is specified during creation the name of a data base element instance is set according to the item designation rules, and it can be changed to a more significant one later.

NAME Terminal

All elements can be given a unique user name allowing a second identifying method.
The default user name for the element is the item designation.

IMPL, ACT Terminals

IMPL and ACT can be modified to determine the initialization of a module or signal after next download of configuration data.

IMPL = 0	means the module (and its signals) is spare and will not be initialized.
IMPL = 1	means the module is implemented.
ACT = 0	means the signal is spare and will not be activated after module initializing.
ACT = 1	means the signal is active.

The initialization of modules and their signals will always be done after start-up of the Advant Controller 160 system or after on-line change of the data base element. The configuration values for the I/O modules are stored on the Advant Controller 160 CPU module.

DIAG Terminal of S800 I/O Modules

The following table defines the bits of terminal DIAG for S800 I/O modules.

Table 2. Description of DIAG (S800 I/O modules)

Bit	Value	Description
0	OPERATIONAL	The I/O module is operational, working okay.
1	OSP	The I/O module has detected loss of communication with the Communication Interface (e.g. CI810) module and entered the OSP (Output Set as Predetermined) state. It will automatically be taken into operation again by the system.
2	READY	The module has its parameters and will automatically be taken in operation by the system.
3	NOT CONFIGURED	The module has not its configuration parameters. The system will automatically send down the parameters and take the module into operation.
4	ERROR	The module or the system has detected a faulty module or the communication with the module is broken. *Replace the I/O module, if the module shows a red LED.*
5	INITIATION	The module is performing an initiation. The system will automatically configure the module and take it into operation.
6	MAINTENANCE	Not reported by any I/O module.
7	STATE: 7	Undefined state #7. Please report to ABB Service.

Table 2. Description of DIAG (S800 I/O modules) (Continued)

Bit	Value	Description
8	NO CONFIGURATION	Default value when creating the data base element. The system will automatically download the configuration and take the module into operation. It is also reported when the IMPL (Implemented) flag is set to 0. *Set IMPL to 1.*
9	OSP (FORCED)	The Communication module (e.g. CI810) has detected that it has not been accessed by the Controller within expected time and forced all output modules into the OSP (Output Set as Pre-determined) state. It will automatically be taken into operation again by the system.
10	WRONG TYPE	The I/O module and the data base configuration does not comply. *Change the I/O module or replace the data base element with the appropriate type.*
11	CONFIGURING	The CI810 module reports this when performing configuration of the I/O module.
12	ERROR (FORCED)	The Communication module (e.g. CI810) has detected an error on the I/O module. *Replace the I/O module*.
13	HW MISSING	The I/O module is not inserted in its position. *Insert the I/O module*.
14	STATE: 14	Undefined state #14. Please report to ABB Service.
15	STATE: 15	Undefined state #14. Please report to ABB Service.

STATUS Terminal of AIS, AOS, DIS, and DOS Elements

The following table defines the bits of terminal STATUS for Extended Data Base elements AIS, AOS, DIS, and DOS.

Table 3. Description of bits for terminal STATUS

Bit	Name	Description
1	ACT	Value of terminal ACT.
2	ERROR	Value of terminal ERR.
3	DISTURBANCE	Sum error bit.
4	UPDATE_BLK	Input: Blocked by AdvaSoft or forced by engineering tool. Output: Manual mode was set by AdvaSoft.
5	ALARM_UNACK	Unacknowledged alarm pending.
6	ALARM_BLK	0=normal operation 1=limit check events are disabled.
7	AL_PERIOD_BLK	Value of terminal EV_STAT.

Table 3. Description of bits for terminal STATUS (Continued)

Bit	Name	Description
8	ERR_CTRL	Value of terminal EV_ERR.
9	VALUE	DIS, DOS: Value of terminal VALUE. AIS, AOS: Not applicable.
10–12	RES	Not applicable.
13	FORCE_CMD	Forcing is active.
14	UPDATE_BLK_CMD or MAN_AUTO_CMD	Inputs: UPDATE_BLK function is activated. Outputs: Flag UPDATE_BLK will be set.
15	ALARM_BLK_CMD	ALARM_BLK function is activated, the corresponding flag ALARM_BLK will be set.
16	ACK_CMD	Alarms will be acknowledged and ALARM_UNACK flag will be reset.
17	ABOVE_HI_LIM2	AIS: Value of terminal VALUE>H2 AOS, DIS, DOS: Not applicable.
18	ABOVE_HI_LIM1	AIS: Value of terminal VALUE>H1 AOS: Value of terminal VALUE=HI. DIS, DOS: Not applicable.
19	BELOW_LO_LIM1	AIS: Value of terminal VALUE<L1 AOS: Value of terminal VALUE=LO. DIS, DOS: Not applicable.
20	BELOW_LO_LIM2	AIS: Value of terminal VALUE<L2 AOS, DIS, DOS: Not applicable.
21–32	–	*Not used.*

Advant Controller 160 Station Status

The status of an Advant Controller 160 can be seen in the AdvantFieldbus 100 data base elements CI626, CI627, CI630, and CI631. It is also reported to another station via data base element AF 100 Station (AF100S) and in Advasoft for Windows. The status comprises the status of the communication interface itself plus the individual status information taken from each processor module (up to 6). Bits from the processor modules are combined with a logical OR operation except for ACT and CRA which are combined with an AND operation. Error, warning, and information from redundant components are treated in the same way as for non-redundant components. Errors and warnings are indicated in terminal ERR and WARNING of data base element AF100S and in terminals GE and GW of the other elements (CI626, CI627, CI630, CI631).

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Table 4. Description of Station Status

Mnemo	**Bit**	**Description**	**Operation**	**Error/ Warning /Info**	**Action**
ACT	1	**ACT**ive, application program is executing.	AND	Warning if ACT=0	–
SE	2	**S**evere **E**rror, HW or system SW. Includes bit OVERLOAD from STATUS1 terminal.	OR	Error	Check Processor Module.
HWE	3	Non-fatal **H**ard**W**are **E**rror (e.g., RTC fault or user F-PROM fault).	OR	Error	Check Processor Module.
SWE	4	Application **SW E**rror. Includes bit HIGHLOAD from STATUS1 terminal.	OR	Error	Check application program.
PHE	5	**P**eripheral **H**ardware **E**rror caused by S600 I/O, CI6xx, SC610, CI53x, S800 I/O, CI8xx.	OR	Error	Check hardware.
PRE	6	**P**rocess **E**rror caused by S600 or S800 I/O.	OR	Error	Check I/O hardware.
CRA	7	**C**able **R**edundancy **A**vailable in main AF 100 interface.	AND	Info	–
RC1	8	**R**edundant **C**able **1** for main AF 100 failed.	OR	Warning	Replace cable.
RC2	9	**R**edundant **C**able **2** for main AF 100 failed.	OR	Warning	Replace cable.
RPA	10	**R**edundant **P**ower supply **A** failed.	–	Warning	Check power supply unit A.
RPB	11	**R**edundant **P**ower supply **B** failed.	–	Warning	Check power supply unit B.
CD	12	**C**hanged **Diagnostics** status.	OR	Info	–
BIT13	13	*Reserved for future use.*	–	–	–
BIT14	14	*Reserved for future use.*	–	–	–
GE	15	**G**eneral **E**rror. Indicates an error.	OR	Error	–
GW	16	**G**eneral **W**arning. Indicates a warning.	OR	Warning	–
BIT17–BIT32	17–32	*Reserved for future use.*	–	–	–

STATUS1 Terminal of the Processor Module Data Base Elements

The following table describes the bit values of terminal STATUS1 for the Processor Module data base elements PM640, PM644, PM645, and PM646:.

Table 5. Description of bits for terminal STATUS1

Mnemonic	Bit	Description	Error/ Warning/ Info
ERR	1	Severe **ERR**or in processor module, application PROM error or boot PROM error.	Error
OVERLOAD	2	Processor module has restarted due to **OVERLOAD**. Error Report contains “Overload” entry.	Error
HIGHLOAD	3	Processor module **HIGH LOAD** detected. Error Report contains “High Load” entry.	Error
IOFAIL	4	**I**/**O** module **FAIL**ure. A wrong module is detected, module is passive or not accessible.(1)	Error
IOPRE	5	**I**/**O** module reports **PR**ocess **E**rror.(1)	Warning
SWE	6	Application **S**oft**W**are **E**rror.(1)	Error
HWE	7	Non-fatal **H**ard**W**are **E**rror (e.g., RTC fault, F-PROM fault).(1)	Error
	8–16	*Not used.*	–
REDEG	17	**RE**dundancy **DEG**ree. 0 = 1oo1, 1oo2 redundancy is active. Also set in case of a degradation 2oo3 → 1oo2. 1 = 2-out-of-3 redundancy is active.	Info
RESTAT1	18–20	**RE**dundancy **STAT**us of Processor Module **1** or station 1 (right selector on front plate = 1). Details below.	See below.
RESTAT2	21–23	**RE**dundancy **STAT**us of Processor Module **2** or station 2 (right selector on front plate = 2). Details below.	
RESTAT3	24–26	**RE**dundancy **STAT**us of Processor Module **3** or station 3 (right selector on front plate = 3). Details below.	
	27–32	*Not used.*	–

(1) Taken from AF 100 Status word.

Redundancy Status

Description of RESTAT1, RESTAT2, and RESTAT3.

Table 6. Description of bits for redundancy status

Redundancy Status				**Error/ Warning/ Info**
RESTAT1	**Bit 20**	**Bit 19**	**Bit 18**	
RESTAT2	**Bit 23**	**Bit 22**	**Bit 21**	
RESTAT3	**Bit 26**	**Bit 25**	**Bit 24**	
DEFECTIVE(1)(2)	0	0	0	Error
STANDBY (2oo3)(3)(2)	0	0	1	Info
TRACKING ACTIVE (1oo2, 2oo3)(2)	0	1	0	Info
MASTER(2)	0	1	1	Info
STATUS TOOL ACTIVE(4)	1	0	0	Warning
CONTINUOUS TRACKING (1oo2)(4)	1	0	1	Info
INITIALIZATION(4)	1	1	0	Info
NO REDUNDANCY(4)	1	1	1	Info

(1) DEFECTIVE indicates also deviation master from slaves in case of triple redundancy which requires tracking. Therefore master becomes slave.
(2) Each processor module *n* reports its own status RESTAT*n* and the status of its redundancy partners in the other RESTAT triples.
(3) Slave without deviation, no tracking active
(4) Each processor reports only its own status.

EV_ERR Terminal, Error Conditions Generating Events

The following table defines the error conditions that generate an event for Extended Data Base elements AIS, AOS, DIS, and DOS. Events are always generated if EV_ERR = 1. A change in the ERR terminal or CALC_ERR terminal triggers the event.

Table 7. Terminal EV_ERR, error conditions for events

SOURCE	**ERR**	**CALC_ERR**	**Error condition**	**Event generated**	
				EV_ERR=0	**EV_ERR=1**
HW	1 → 0	–	no	no	yes
HW	0 → 1	–	yes	no	yes
PC	–	1 → 0	no	no	yes

Table 7. Terminal EV_ERR, error conditions for events (Continued)

SOURCE	**ERR**	**CALC_ERR**	**Error condition**	**Event generated**	
				EV_ERR=0	**EV_ERR=1**
PC	–	0 → 1	yes	no	yes
MMI	–	–	no	no	no
RECEIVE	–	–	of sender	no	no

Creation and Modification of Data Base Elements

Creation and modification of data base elements may be done only with an Advant Station 100 Series Engineering Station.

Technical Description

The technical description of the I/O modules can be found in the manual *Advant Controller 160 Technical Description*.

List of Element Types and Call Names

The following table shows the relation between element types and call names.

Table 8. List of Element Types and Call Names

Data Base Element Type	**Call Name(s)**
Advant Fieldbus 100	CI626, CI627, CI630, CI631
AF 100 Station	AF100S
AI Calculated	AIC
AI event from MVB	AIMVB
AI module	AI610, AI620, AI625, AI630, AI635, AI810, AI820, PB_AI810, PB_AI820
Analog Input (1)	AIS, AIS610, AIS620, AIS625, AIS630, AIS635, AIS810, AIS820, AXIS645, AXIS646, PB_AI810S, PB_AI820S
Analog Output (1)	AOS, AOS610, AOS650, AOS810, AOS820, AXOS645, PB_AO810S, PB_AO820S
AO module	AO610, AO650, AO810, AO820, PB_AO810, PB_AO820
AX module	AX645, AX646
Boolean Data	DAT(B), MB

Table 8. List of Element Types and Call Names (Continued)

Data Base Element Type	Call Name(s)
Boolean Param	PARDAT(B)
Boolean MDAT	MDATS(NB)
Boolean Value	PARDATS(NB), MBS
Carrier module	SC610
DataSet Peripheral	DSP
DI Calculated	DIC
DI event from MVB	DIMVB
Digital Input (1)	DIS, DIS610, DIS620, DIS621, DIS622, DIS635, DIS636, DIS650, DIS651, DIS652, DIS685, DIS81x, DIS82x, DXIS610, PB_DI810S, PB_DI811S, PB_DI814S, PB_DI820S, PB_DI821S
DI module	DI610, DI620, DI621, DI622, DI635, DI636, DI650, DI651, DI652, DI685, DI81x, DI82x, PB_DI810, PB_DI811, PB_DI814, PB_DI820, PB_DI821
Digital Output (1)	DOS, DOS610, DOS620, DOS625, DOS630, DOS810, DOS820, DXOS610, PB_DO810S, PB_DO814S, PB_DO820S
DO module	DO610, DO620, DO625, DO630, DO81x, DO82x, PB_DO810, PB_DO814, PB_DO820
DP module	DP620, DP640
Event Set (Send)	EVS(S)
Event Set (Transit)	EVS(T)
High Speed Link Rcv	HSLR
High Speed Link Snd	HSLS
Integer Data	DAT(I), MI
Integer MDAT	MDATS(NI)
Integer Param	PARDAT(I)
Integer Value	PARDATS(NI)
IntegerLong MDAT	MDAT(IL)
IntegerLong Data	DAT(IL), MIL
IntegerLong Param	PARDAT(IL)
MMI Data Object	DAT_DAT

Table 8. List of Element Types and Call Names (Continued)

Data Base Element Type	Call Name(s)
MMI Data Object AI	DAT_AI
MMI Data Object AO	DAT_AO
MMI Data Object DI	DAT_DI
MMI Data Object DO	DAT_DO
MVI	CI532
MVI Channel	MVICHAN
MVI Data Block	MVB
MVI Node	MVINODE
Packed Bool. MDAT	MDAT(NB)
Packed Bool. Param	PARDAT(NB)
Packed Integer Data	DAT(II)
Packed Int. Param	PARDAT(II), PARDAT(NI)
Packed Int. MDAT	MDAT(NI)
Processor Module	PM640, PM644, PM645, PM646
PROFIBUS-DP	PB
PROFIBUS Slave	PBS
Pulse (1)	DPS620
Real Data	DAT(R), MR
Real Param	PARDAT(R)
Real MDAT	MDAT(R)
Rotational Speed	DPS640
RTD module	AI830, PB_AI830
RTD Input (1)	AIS830, PB_AI830S
S600 Bus Ext. I/O	CI610
S600 Bus Ext. Base	CI615
S800 FCI	CI830
S800 I/O Station	CI810, CI820
Standard Drive	PB_ACS600
TC module	AI835, PB_AI835
TC Input (1)	AIS835, PB_AI835S

(1) Element type which can not be created directly.

References between data base elements:

EVS(S)	—— *unique* ——>	AIC, DIC, AIMVB, DIMVB, DIS650, DIS651, DIS652, DI685, AIS, AOS, DIS, DOS
AIMVB, DIMVB	—— *multiple* ——>	MVB
DSP, MVB, DAT_AI, DAT_AO, DAT_DI, DAT_DO, DAT_DAT	—— *multiple* ——>	DAT(B), DAT(I), DAT(II), DAT(IL), DAT(R)
CI532	—— *unique* ——>	MVC
PM644	—— *multiple* ——>	PB, MODCHAN
PM645, PM646	—— *multiple* ——>	HSLR, HSLS, MODCHAN

“*multiple*” means that multiple references to one instance can be defined,
“*unique*” means that the element’s instance can be referenced only once.

Memory Requirements

The different memory requirements with respect to the connected terminals for the data base elements in Advant Controller 160 are listed in the following tables. For a given application the memory usage—except the additional system data—is summarized in the target code information file (COTL0000.C00).

(n = number of connections to signal terminals of the same module)

Table 9. Memory Requirements for Data Base Elements, Modules and Signals

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Common data exten–ded (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
AF100S	40	–	–	–	8	–	–
WARNING, ERR, SNA	–	–	–	–	–	10 + 4 × n	–
ACT to BIT32	–	–	–	–	–	10 + 6 × n	–
AI610	20	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
AIS610	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
AI620, AI625	602/538	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–

Table 9. Memory Requirements for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Common data extended (bytes)**	**Additional system data (bytes)**	**Input connect. (GET) (bytes)**	**Output connect. (PUT) (bytes)**
AIS620, AIS625	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
VALUE>H2	–	–	–	–	–	10 + 4 × n	–
VALUE>H1	–	–	–	–	–	10 + 4 × n	–
VALUE<L1	–	–	–	–	–	10 + 4 × n	–
VALUE<L2	–	–	–	–	–	10 + 4 × n	–
AI630, AI635	466/618	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
AIS630, AIS635	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
VALUE>H2	–	–	–	–	–	10 + 4 × n	–
VALUE>H1	–	–	–	–	–	10 + 4 × n	–
VALUE<L1	–	–	–	–	–	10 + 4 × n	–
VALUE<L2	–	–	–	–	–	10 + 4 × n	–
AI810, AI820	212	–	–	–	8	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
AIS810, AIS820	–	–	–	–	–	12 + 4 × n	–
ERR, VALUE	–	–	–	–	–	12 + 8 × n	–
AI830, AI835	276	–	–	–	8	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
AIS830, AIS835	–	–	–	–	–	12 + 6× n	–
ERR, VALUE	–	–	–	–	–	12 + 12 × n	–
AO610, AO650	32/206	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
AOS610, AOS650	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	10 + 4 × n
AO810, AO820	196	–	–	–	16	–	–
ERR, WARNING		–	–	–	–	12 + 4 × n	12 + 4 × n
DIAG		–	–	–	–	14	14
AOS810, AOS820	–	–	–	–	–	12 + 4 × n	12 + 4 × n
AX645	838	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
AX646	1196	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–

Table 9. Memory Requirements for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Common data exten–ded (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
AXDOS646	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 6 × n	10 + 6 × n
ERR, VALUE	–	–	–	–	–	10 + 12 × n	10 + 6 × n
AXIS645	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
AXIS646	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
VALUE>H2	–	–	–	–	–	10 + 4 × n	–
VALUE>H1	–	–	–	–	–	10 + 4 × n	–
VALUE<L1	–	–	–	–	–	10 + 4 × n	–
VALUE<L1	–	–	–	–	–	10 + 4 × n	–
AXOS645	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	10 + 4 × n
AXOS646	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	10 + 4 × n
CI532	70	–	–	–	26	–	–
ERR	–	–	–	–	–	14	–
CI610, CI615	32	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
CI626, CI627	68	–	–	–	10	–	–
ERR	–	–	–	–	–	12	–
CI630, CI631	92	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
CI810	64	–	–	–	16	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
CI820	64	–	–	–	16	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
DI610, DI620, DI621, DI622	32	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
DIS610, DIS620, DIS621, DIS622	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 6 × n	–
ERR, VALUE	–	–	–	–	–	10 + 12 × n	–

Table 9. Memory Requirements for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Common data exten–ded (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
DI635, DI636	32	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
DIS635, DIS636	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 6 × n	–
ERR, VALUE	–	–	–	–	–	10 + 12 × n	–
DI650, DI651, DI652	602	72 (1)	–	2 (1)	–	–	–
ERR	–	–	–	–	–	12	–
DI685	602	72 (1)	–	2 (1)	–	–	–
ERR	–	–	–	–	–	12	–
DIS650, DIS651, DIS652	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 6 × n	–
ERR, VALUE	–	–	–	–	–	10 + 12 × n	–
DIS685	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 6 × n	–
ERR, VALUE	–	–	–	–	–	10 + 12 × n	–
DI81x	264	–	–	–	8	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
DI82x	168	–	–	–	8	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
DIS81x, DIS82x							
VALUE only	–	–	–	–	–	12 + 4 × n	–
ERR, VALUE	–	–	–	–	–	12 + 8 × n	–
DI885	198	–	–	–	8	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	–
DIAG	–	–	–	–	–	14	–
DIS885							
VALUE only	–	–	–	–	–	12 + 4 × n	–
ERR, VALUE	–	–	–	–	–	12 + 8 × n	–
DO610, DO620,	32	–	–	–	–	–	–
DO625, DO630	–	–	–	–	–	–	–
ERR						12	
DOS610, DOS620,							
DOS625, DOS630	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 6 × n	10 + 6 × n
ERR, VALUE	–	–	–	–	–	10 + 12 × n	10 + 6 × n

Table 9. Memory Requirements for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Common data exten–ded (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
DO81x	264	–	–	–	16	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	12 + 4 × n
DIAG	–	–	–	–	–	14	14
DO82x	168	–	–	–	16	–	–
ERR, WARNING	–	–	–	–	–	12 + 4 × n	12 + 4 × n
DIAG	–	–	–	–	–	14	14
DOS81x, DOS82x							
VALUE only	–	–	–	–	–	12 + 4 × n	12 + 4 × n
DP620, DP640	202	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
DPS620, DPS640	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	10 + 4 × n
DSP	14	20 + 4 × m (3)	4	2	8	–	–
VALID	–	–	–	–	–	4	4
ERR	–	–	–	–	–	4	4
DX610	32	–	–	–	–	–	–
ERR	–	–	–	–	–	12	–
DXIS610	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
DXOS610	–	–	–	–	–	–	–
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	10 + 4 × n
PB	70	–	–	–	–	–	–
ERR	–	–	–	–	–	10	–
DIAG	–	–	–	–	–	10	–
PBS	550	–	–	–	–	–	–
DIAG	–	–	–	–	–	16	–
ERR	–	–	–	–	–	14	–
Boolean	–	–	–	–	–	12 + 6 × n	12 + 6 × n
Packed Boolean	–	–	–	–	–	14 + 6 × n	14 + 6 × n
Integer	–	–	–	–	–	12 + 6 × n	12 + 6 × n
Integer Long	–	–	–	–	–	12 + 6 × n	12 + 6 × n
Real	–	–	–	–	–	12 + 6 × n	12 + 6 × n
PM640, PM644,							
PM645, PM646	58/78	–	–	–	–	–	–
ERR,	–	–	–	–	–	6 + 4 × p (2)	–
CHECKERR,	–	–	–	–	–	–	–
SC610							

(1) only if referenced by EVS(S), see Table 11
(2) p = number of connections to terminals of the same module
(3) m = number of DAT elements referenced

Table 10. Memory Requirements for Data Base Elements, Common Data

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Additional system data (bytes)**	**Input con– nect. (GET) (bytes)**	**Output con– nect. (PUT) (bytes)**
DAT(B)	–	1	8	–	–	–
VALID	–	–	–	–	4	4
VALUE, VALUE2, …, VALUE32	–	–	–	–	6 each	4 each
DAT(I)	–	1	6	–	–	–
VALID	–	–	–	–	4	4
VALUE	–	–	–	–	4	4
DAT(II)	–	1	6	–	–	–
VALID	–	–	–	–	4	4
VALUE	–	–	–	–	4	4
VALUE2	–	–	–	–	4	4
DAT(IL)	–	1	6	–	–	–
VALID	–	–	–	–	4	4
VALUE	–	–	–	–	4	4
DAT(R)	–	1	6	–	–	–
VALID	–	–	–	–	4	4
VALUE	–	–	–	–	4	4
PARDAT(B)	–	7	4	–	–	–
VALUE, VALUE2, …, VALUE 32	–	–	–	–	6each	4 each
PARDAT(I)	–	7	4	–	–	–
VALUE	–	–	–	–	4	4
PARDAT(II)	–	7	4	–	–	–
VALUE	–	–	–	–	4	4
VALUE2	–	–	–	–	4	4
PARDAT(IL)	–	7	4	–	–	–
VALUE	–	–	–	–	4	4
PARDAT(NB)	–	7	4	–	–	–
VALUE	–	–	–	–	4	4
PARDAT(NI)	–	7	4	–	–	–
VALUE	–	–	–	–	4	4
PARDAT(R)	–	7	4	–	–	–
VALUE	–	–	–	–	4	4
PARDATS(NB)	–	–	–	–	–	–
VALUE	–	–	–	–	4	4

Table 10. Memory Requirements for Data Base Elements, Common Data (Continued)

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
PARDATS(NI)	–	–	–	–	–	–
VALUE	–	–	–	–	4	4

Table 11. Memory Requirements for Data Base Elements, Event Handling

Call Name and Terminals	**Common data descr. (bytes)**	**Common data exten–ded (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
AIC	56	44	–	–	–
ERR	–	–	–	4	4
NORM_TR	–	–	–	4	–
ERR	–	–	–	4	4
VALUE	–	–	–	4	4
EN_HI2	–	–	–	4	4
HI_LIM2	–	–	–	4	4
EN_HI1	–	–	–	4	4
HI_LIM1	–	–	–	4	4
EN_LO1	–	–	–	4	4
LO_LIM1	–	–	–	4	4
EN_LO2	–	–	–	4	4
LO_LIM2	–	–	–	4	4
HYST	–	–	–	4	4
AIMVB, DIMVB	50	6/4	–	–	–
NORM_TR	–	–	–	4	4
ERR	–	–	–	4	–
DIC	34	14	–	–	–
NORM_TR	–	–	–	4	4
ERR	–	–	–	4	–
VALUE	–	–	–	4	4
DI650, DI651, DI652, DI685	72 (1)	2 (1)	–	–	–
EVS(S)	46	172	3628/20728 (2)	–	–
CLEAR_Q	–	–	–	4	4
Q_EMPTY	–	–	–	4	–
WARNING	–	–	–	4	–
ERR	–	–	–	4	–
EVS(T)	46	174	3116/20216 (2)	–	–
CLEAR_Q	–	–	–	4	4
Q_EMPTY	–	–	–	4	–
WARNING	–	–	–	4	–
ERR	–	–	–	4	–

(1) only if referenced by EVS(S)
(2) QUEUE=NORMAL/QUEUE=EXTENDED

Table 12. Memory Requirements for Data Base Elements, RCOM

Call Name and Terminals	Config. data (bytes)	Common data descr. (bytes)	Common data extended (bytes)	Additional system data (bytes)	Input con– nect. (GET) (bytes)	Output con– nect. (PUT) (bytes)
MODCHAN	18	–	–	–	–	–
ERR	–	–	–	–	10 + 4 × r (2)	–
CTR_RES	–	–	–	–	10 + 4 × r (2)	14
REQ_CTR, CRC_ERR, CHAR_ERR	–	–	–	–	10 + 4 × r (2)	–
MVB	36	62 + 4 x r(1)(2)	22	4	–	–
BLOCKED	–	–	–	–	4	4
EXECUTE	–	–	–	–	4	4
EXECDONE	–	–	–	–	4	–
VALID	–	–	–	–	4	4
ERR	–	–		–	4	–
MVICHAN	78	18	64	16	10	–
ERR	–	–	–	–	4	–
DSR	–	–	–	–	4	–
DCD	–	–	–	–	4	–
CTS	–	–	–	–	4	–
RI	–	–	–	–	4	–
CTRLERR	–	–	–	–	4	–
MVINODE	176	16	0	4	10	–
STATUS1	–	–	–	–	4	–
STATUS2	–	–	–	–	4	–
STATUS3	–	–	–	–	4	–
ERR	–	–	–	–	4	–

(1) add 24 if referenced by AIMVB or DIMVB
(2) r = number of connections

Table 13. Memory Requirements for Data Base Elements, High Speed Link

Call Name and Terminals	Common data DATA (bytes)	Input con– nect. (GET) (bytes)	Output con– nect. (PUT) (bytes)
HSLR	– (1)		
ERR		6	–
VALUE, VALUE2, …, VALUE32		6	–
HSLS	– (2)		
ERR		6	–
VALUE, VALUE2, …, VALUE32		–	6

Call Name and Terminals	Common data DATA (bytes)	Input con– nect. (GET) (bytes)	Output con– nect. (PUT) (bytes)
MDAT(IL)	– (3)		
VALUE only		6	6
ERR, VALUE		6	6
MDAT(NB)	– (3)		
VALUE only		6	6
ERR, VALUE		6	6
MDAT(NI)	– (3)		
VALUE only		6	6
ERR, VALUE		6	6
MDAT(R)	– (3)		
VALUE only		6	6
ERR, VALUE		6	6
MDATS(NB)			
VALUE only		6	6
ERR, VALUE		6	6
MDATS(NI)	– (3)		
VALUE only		6	6
ERR, VALUE		–	–

(1) Total memory available for 32 elements.
(2) Total memory available for 16 elements.
(3) Total memory available is dimensioned for 200 elements.

Table 14. Memory Requirements for Data Base Elements, Extended Element

Call Name and Terminals	Common data DATA (bytes)	Common data CODE (bytes)	Input con– nect. (GET) (bytes)	Output con– nect. (PUT) (bytes)
AIS	96	44		
VALUE			4	–
ERR + VALUE			4	–
STATUS			4	–
CALC_VAL			4	4
CALC_ERR			4	4
EN_H2			2	2
EN_H1			2	2
EN_L1			2	2
EN_L2			2	2
VALUE>H2			2	–
VALUE_H1			2	–
VALUE<L1			2	–
VALUE<L2			2	–

Table 14. Memory Requirements for Data Base Elements, Extended Element (Continued)

Call Name and Terminals	**Common data DATA (bytes)**	**Common data CODE (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
AOS	48	36		
VALUE			4	–
ERR + VALUE			4	–
STATUS			4	–
CALC_VAL			4	4
CALC_ERR			4	4
EN_LO			2	2
VALUE=HI			2	–
VALUE=LO			2	–
DIS	32	20		
VALUE			2	–
ERR + VALUE			2	–
STATUS			2	–
CALC_VAL			2	2
CALC_ERR			2	2
DOS	18	14		
VALUE			2	2
ERR + VALUE			2	–
STATUS			2	–
CALC_VAL			2	2
CALC_ERR			2	2
MB	24	16		
VALUE			4	4
CALC_VAL			4	4
MBS				
VALUE			4	4
CALC_VAL			4	4
MI	8	10		
VALUE			2	2
CALC_VAL			2	2
MIL	14	12		
VALUE			4	4
CALC_VAL			4	4
MR	140	12		
VALUE			4	4
CALC_VAL			4	4

Execution Times of GET and PUT Elements

The following execution time table is valid for connections from PC element terminals to the specified data base element terminal. The resulting execution time has to be added to the runtime of the control module.

If, for a module, no ERR terminal of a signal is accessed from a control module, use the formula given at VALUE only of the signal.

If, for a module, at least one ERR of a signal is accessed from a control module, use the formula given at ERR, VALUE of the signal.

n = number of connections to the same module

t = 4 microseconds for transfer within base station
10 microseconds for transfer from/to I/O station (via CI610/CI615)

Table 15. Execution Times for Data Base Elements, Modules and Signals

Call Name and Terminals	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
AF100S WARNING, ERR, SNA ACT to BIT32	 40 + 10 × n 40 + 9 × n	 – –
AI610 ERR	 24 + t	 –
AI620, AI625 ERR	 24 + t	 –
AI630, AI635 ERR	 24 + t	 –
AI810 ERR, WARN DIAG	 470 + 190 × (n - 1) 62	 – –
AI830, AI835 ERR, WARNING DIAG	 470 + 190 × (n - 1) 62	 – –
AIS610 VALUE only ERR, VALUE	 8 + n × (19 + t) 8 + n × (23 + t)	 – –
AIS620, AIS625 VALUE only ERR and VALUE VALUE>H2 VALUE>H1 VALUE<L1 VALUE<L2	 8 + n × (19 + t) 8 + n × (23 + t) 21 + t + n × 5 21 + t + n × 5 21 + t + n × 5 21 + t + n × 5	 – – – – – –

Table 15. Execution Times for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Connection to a PC element**	
	Input terminal GET element (μs)	**Output terminal PUT element (μs)**
AIS630, AIS635		
VALUE only	8 + n × (19 + t)	–
ERR and VALUE	8 + n × (23 + t)	–
VALUE>H2	21 + t + n × 5	–
VALUE>H1	21 + t + n × 5	–
VALUE<L1	21 + t + n × 5	–
VALUE<L2	21 + t + n × 5	–
AIS810		
VALUE only	470 + 190 × (n - 1)	–
ERR, VALUE	470 + 195 × (n - 1)	–
AIS830, AIS835		
VALUE only	470 + 190 × (n - 1)	–
ERR and VALUE	470 + 195 × (n - 1)	–
VALUE>H2	280 + n × 10	–
VALUE>H1	280 + n × 10	–
VALUE<L1	280 + n × 10	–
VALUE<L2	280 + n × 10	–
AO610, AO650		
ERR	24 + t	–
AO810, AO820		
ERR, WARNING	470 + 190 × (n - 1)	–
DIAG	62	–
AOS610, AOS650		
VALUE only	8 + n × (19 + t)	5 + n × (4 + t)
ERR and VALUE	8 + n × (23 + t)	–
AOS810, AOS820		
VALUE only	470 + 190 × (n-1)	470 + 190 × (n - 1)
ERR and VALUE	470 + 195 × (n-1)	–
AX645		
ERR	24 + t	
AX646		
ERR	24 + t	
AXDOS646		
VALUE only	21 + t + n × 5	47 + t + n × 6
ERR, VALUE	22 + t + n × 8	–
AXIS645		
VALUE only	8 + n × (19 + t)	
ERR and VALUE	8 + n × (23 + t)	
AXIS646		
VALUE only	8 + n × (19 + t)	
ERR, VALUE	8 + n × (23 + t)	

Table 15. Execution Times for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
AXIS646		
VALUE only	8 + n × (19 + t)	–
ERR, VALUE	8 + n × (23 + t)	–
VALUE>H2	21 + t + n × 5	–
VALUE>H1	21 + t + n × 5	–
VALUE<L1	21 + t + n × 5	–
VALUE<L1	21 + t + n × 5	–
AXOS645		
VALUE	8 + n × (19 + t)	5 + n × (4 + t)
ERR and VALUE	8 + n × (23 + t)	-
AXOS646		
VALUE	8 + n × (19 + t)	5 + n × (4 + t)
ERR and VALUE	8 + n × (23 + t)	-
CI532		
ERR	24 + t	–
CI610, CI615		
ERR	24 + t	–
CI626, CI627		
ERR	24 + t	–
CI630, CI631		
ERR	24 + t	
CI810		
ERR, WARNING	470 + 190 × (n-1)	–
DIAG	62	–
CI820		
ERR, WARNING	470 + 190 × (n-1)	–
DIAG	62	–
DI610, DI620, DI621, DI622		
ERR	24 + t	–
DI635, DI636		
ERR	24 + t	–
DI650, DI651, DI652		
ERR	24 + t	–
DI685		
ERR	24 + t	–
DI81x, DI82x		
ERR, WARNING	470 + 190 × (n - 1)	–
DIAG	62	–

Table 15. Execution Times for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DI885		
ERR, WARNING	470 + 190 × (n - 1)	–
DIAG	62	–
DIS610, DIS620, DIS621, DIS622		
VALUE only	21 + t + n × 5	–
ERR and VALUE	22 + t + n × 8	–
DIS635, DIS636		
VALUE only	21 + t + n × 5	–
ERR and VALUE	22 + t + n × 8	–
DIS650, DIS651, DIS652		
VALUE only	26 + t + n × 7	–
ERR and VALUE	26 + t + n × 9	–
DIS685		
VALUE	26 + t + n × 7	–
ERR and VALUE	26 + t + n × 9	–
DIS81x, DIS82x		
VALUE only	330 + 11 × (n - 1)	–
ERR and VALUE	330 + 11 × (n - 1)	–
DIS885		
VALUE only	21 + t + n × 5	–
ERR and VALUE	22 + t + n × 8	–
DO610, DO620, DO625, DO630		
ERR	24 + t	–
DO81x, DO82x		
ERR, WARNING	470 + 190 × (n - 1)	–
DIAG	62	–
DP620		
ERR	24 + t	–
DP640		
ERR	24 + t	–
DOS610, DOS620, DOS625, DOS630		
VALUE only	21 + t + n × 5	47 + t + n × 6
ERR and VALUE	22 + t + n × 8	–
DOS81x, DOS82x		
VALUE only	330 + 11 × (n - 1)	330 + 11 × (n - 1)
ERR and VALUE	330 + 11 × (n - 1)	–

Table 15. Execution Times for Data Base Elements, Modules and Signals (Continued)

Call Name and Terminals	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DPS620 VALUE only ERR and VALUE	 $6 + n \times (4 + t)$ $6 + n \times (10 + t)$	 – –
DPS640 VALUE only ERR	 $8 + n \times (19 + t)$ $8 + n \times (23 + t)$	 – –
PM640, PM644, PM645, PM646 ERR CHECKERR	 } $8 + 15 \times n$	 – –
SC610 ERR	 $24 + t$	 –

Table 16. Execution Times for Data Base Elements, Data Sets

Name	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DSP VALID VALUE	 5 5	 – –

Table 17. Execution Times for Data Base Elements, Common Data

Name	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DAT(B) VALID VALUE VALUE2 to VALUE32	– 5 5 5 each	– – 5 5 each
DAT(I) VALID VALUE	– 5 5	– – 5
DAT(IL) VALID VALUE	– 5 5	– – 5

Table 17. Execution Times for Data Base Elements, Common Data

Name	Connection to a PC element	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DAT(R)	–	–
VALID	5	–
VALUE	5	5
PARDAT(B)	–	–
VALUE	5	5
VALUE2 to VALUE32	5 each	5 each
PARDAT(I)	–	–
VALUE	5	5
PARDAT(II)	–	–
VALUE	5	5
VALUE2	5	5
PARDAT(IL)	–	–
VALUE	5	5
PARDAT(NI)	–	–
VALUE	5	5
PARDAT(R)	–	–
VALUE	5	5

Table 18. Execution Times for Data Base Elements, Event Handling and RCOM

Name	Connection to a PC element	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
AIC	–	–
NORM_TR	5	5
ERR	5	–
VALUE	5	5
EN_HI2	5	5
HI_LIM2	5	5
EN_HI1	5	5
HI_LIM1	5	5
EN_LO1	5	5
LO_LIM1	5	5
EN_LO2	5	5
LO_LIM2	5	5
HYST	5	5
AIMVB	–	–
NORM_TR	5	5
ERR	5	–

Table 18. Execution Times for Data Base Elements, Event Handling and RCOM (Continued)

Name	Connection to a PC element	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DIC NORM_TR VALUE ERR	– 5 5 5	– 5 5 –
DIMVB NORM_TR ERR	– 5 5	– 5 –
EVS(S) CLEAR_Q Q_EMPTY WARNING ERR	– 5 5 5 5	– 5 – – –
EVS(T) CLEAR_Q Q_EMPTY WARNING ERR	– 5 5 5 5	– 5 – – –
MVB BLOCKED EXECUTE EXECDONE VALID ERR	– 5 5 5 5 5	– 5 5 – 5 –
MVICHAN	180	–
MVINODE	150	–

Execution Time of Event Detection

The data base elements AI Calculated (AIC) and DI Calculated (DIC) are used for event detection by connecting a PC signal to their VALUE terminals.The data base elements AI event from MVB (AIMVB) and DI event from MVB (DIMVB) are used to convert events received in MVI Data Blocks from MasterPiece 40 to internal event format.

There is a system function assigned to each of the above data base elements that executes event detection. The execution times are listed in the following table:

Table 19. Execution of Event Detection Functions

Call Name	**Execution Time (μs)**
AIC	2 500
DIC	800
AIMVB	400
DIMVB	400

Load on Advant Fieldbus 100

The following table can be taken to calculate the load on Advant Fieldbus 100 when Series 800 I/O modules and DataSet Peripheral elements are used. For S800 I/O modules the bus load depends on the cycle time, for a DSP element on its size and the number of DAT elements.

Example:
Given one S800 I/O station including 2× AI810, 2× AO810, 4× DI810, and 4× DO810, with 128 ms cycle time for the AI and AO modules, and 64 ms for the DI and DO modules, the bus load would calculate as:

$$0.033 + 2 \times 0.197 + 2 \times 0.221 + 4 \times 0.138 + 4 \times 0.146 = 2.005\%$$

Table 20. Bus Load in Percent for DSP Elements

Cycle time/ number of DATs	**1 ms**	**2 ms**	**4 ms**	**8 ms**	**16 ms**	**32 ms**	**64 ms**	**128 ms**	**256 ms**	**512 ms**	**1024 ms**	**2048 ms**	**4096 ms**
1	8.8	4.4	2.2	1.1	0.55	0.275	0.138	0.069	0.034	0.017	0.009	0.004	0.027
2	10.8	5.4	2.7	1.35	0.675	0.338	0.169	0.084	0.042	0.021	0.011	0.005	0.003
3-4	15.6	7.8	3.9	1.95	0.975	0.488	0.244	0.122	0.061	0.030	0.015	0.008	0.004
5-8	25.2	12.6	6.3	3.15	1.575	0.788	0.394	0.197	0.098	0.049	0.025	0.012	0.006

Table 21. Bus Load in Percent for S800 I/O Modules

Cycle time / module	**1 ms**	**2 ms**	**4 ms**	**8 ms**	**16 ms**	**32 ms**	**64 ms**	**128 ms**	**256 ms**	**512 ms**	**1024 ms**	**2048 ms**	**4096 ms**
CI810	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
CI820	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
AI810, AI830, AI835	25.2	12.6	6.3	3.15	1.575	0.788	0.394	0.197	0.098	0.049	0.025	0.012	0.006
AI820	15.6	7.8	3.9	1.95	0.975	0.488	0.244	0.122	0.061	0.03	0.015	0.008	0.004
AO810	25.225	12.625	6.325	3.175	1.6	0.812	0.418	0.221	0.123	0.074	0.049	0.037	0.031
AO820	15.615	7.815	3.915	1.965	0.99	0.503	0.259	0.137	0.076	0.046	0.03	0.023	0.019

Table 21. Bus Load in Percent for S800 I/O Modules

Cycle time / module	1 ms	2 ms	4 ms	8 ms	16 ms	32 ms	64 ms	128 ms	256 ms	512 ms	1024 ms	2048 ms	4096 ms
DI81x, DI82x, DI885	8.8	4.4	2.2	1.1	0.55	0.275	0.138	0.069	0.034	0.017	0.009	0.004	0.002
DO81x, DO82x	8.809	4.409	2.209	1.109	0.559	0.284	0.146	0.077	0.043	0.026	0.017	0.013	0.011

Table 7-2. Data Base Elements Listed in Functional Groups

MODULES AND SIGNALS

Processor Modules

PM640 .... *Processor Module* 392
PM644 .... *Processor Module* 394
PM645 .... *Processor Module* 396
PM646 .... *Processor Module* 401

Process I/O

AI module

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AI620 .... *AI module* 50
AI625 .... *AI module* 52
AI630 .... *AI module* 53
AI635 .... *AI module* 55
AI810, AI820.......................... *AI module* 57
AI830 .... *AI module* 59
AI835 .... *AI module* 61

Analog Input

AIS610.................................. *Analog Input* 76
AIS620.................................. *Analog Input* 77
AIS625.................................. *Analog Input* 79
AIS630.................................. *Analog Input* 81
AIS635.................................. *Analog Input* 83

Table 7-2. Data Base Elements Listed in Functional Groups (Continued)

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AIS830	*Analog Input*	88
AIS835	*Analog Input*	91
AXIS645	*Analog Input*	116
AXIS646	*Analog Input*	118
AO module		
AO610	*AO module*	94
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AX module		
AX645	*AX module*	111
AX646	*AX module*	113
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AOS610	*Analog Output*	107
AOS650	*Analog Output*	108
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DI module		
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DI635, DI636	*DI module*	168
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DIS610, DIS620, DIS621, DIS622	*Digital Input*	190
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Table 7-2. Data Base Elements Listed in Functional Groups (Continued)

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DO610, DO620	*DO module*	197
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PB_ACS600	*Standard Drive*	288
PB_AI810	*AI module*	294
PB_AI810S	*Analog Input*	300
PB_AI820	*AI module*	303
PB_AI820S	*Analog Input*	309
PB_AI830	*RTD module*	312

Table 7-2. Data Base Elements Listed in Functional Groups (Continued)

PB_AI830S	*Analog Input*	318
PB_AI835	*TC module*	321
PB_AI835S	*Analog Input*	330
PB_AO810	*AO module*	333
PB_AO810S	*Analog Output*	338
PB_AO820	*AO module*	341
PB_AO820S	*Analog Output*	347
PB_DI81x	*DI module*	351
PB_DI81xS	*Digital Input*	356
PB_DI82x	*DI module*	358
PB_DI82xS	*Digital Input*	363
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Table 7-2. Data Base Elements Listed in Functional Groups (Continued)

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HSLS	*High Speed Link Snd*	234
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MDAT(NB)	*Packed Bool. MDAT*	244
MDAT(NI)	*Packed Int. MDAT*	245
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MDATS(NB)	*Boolean MDAT*	247
MDATS(NI)	*Integer MDAT*	248
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DOS	*Digital Output*	202

Table 7-2. Data Base Elements Listed in Functional Groups (Continued)

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MBS	*Boolean Value*	241
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DAT(I)	*Integer Data*	154
DAT(II)	*Packed Integer Data*	155
DAT(IL)	*IntegerLong Data*	156
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PARDAT(B)	*Boolean Param*	273
PARDAT(I)	*Integer Param*	276
PARDAT(II)	*Packed Int. Param*	277
PARDAT(IL)	*IntegerLong Param*	278
PARDAT(NB)	*Packed Bool. Param*	279
PARDAT(NI)	*Packed Int. Param*	280
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PARDATS(NI)	*Integer Value*	283
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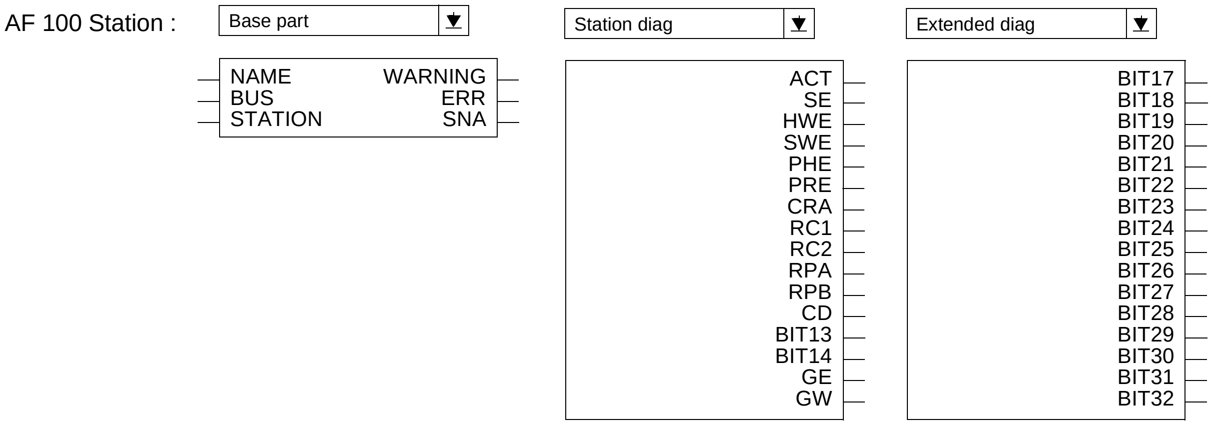
DAT_AO	*Analog Output*	160
DAT_DAT	*Generic*	163
DAT_DI	*Digital Input*	163
DAT_DO	*Digital Output*	165

AF 100 Station AF100S

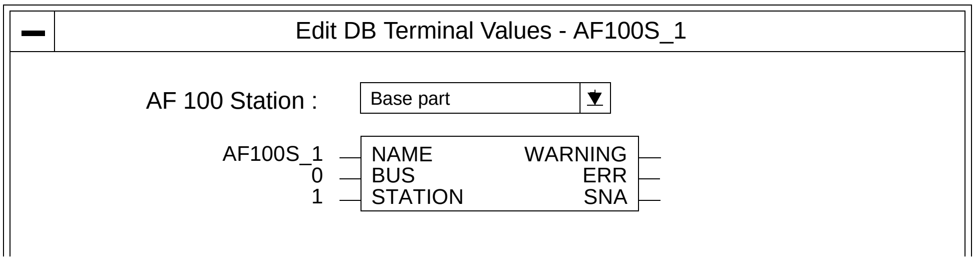
Summary

The AF 100 Station data base element specifies a general type of station connected to Advant Fieldbus 100. It must support services to report diagnostic information in the same way as any Advant Controller. If an Advant Controller 160 is connected, additional information regarding redundancy or multiprocessing can be found in Section Advant Controller 160 Station Status of Chapter Introduction.

Overview



Base part



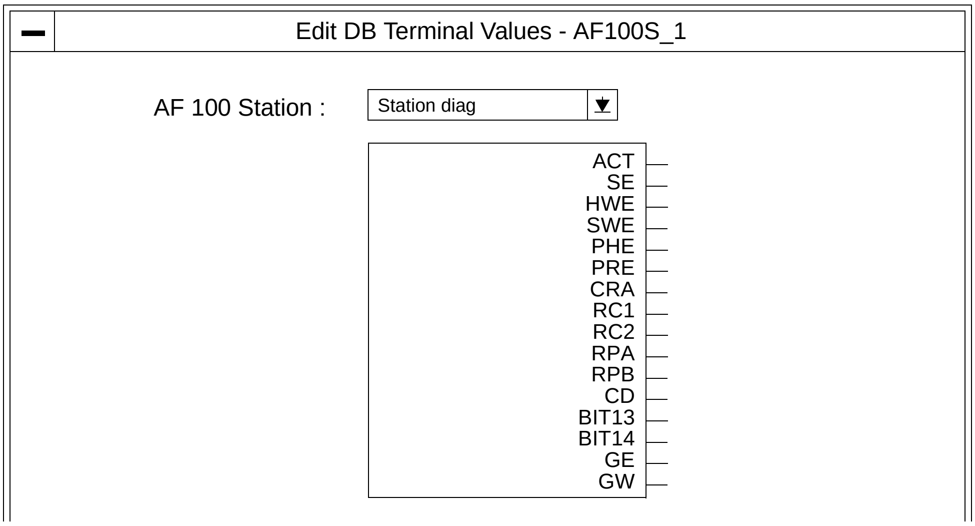
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AF100S_x	–	Unique **NAME**.	Max. 20 characters.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BUS	user	0	–	**BUS** number of AF 100 station.	See section “Address terminals” in the Introduction.
STATION	user	1	–	**STATION** number of AF 100 station.	
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error. WARNING is set if ACT=FALSE or one of the following is TRUE: GW, PHE, RC1, RC2, RPA, RPB, PRE.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors. ERR is set if one of the following is TRUE: SNA, GE, SE, SWE, HWE.	–
SNA	system	–	B(r)	**S**tation **N**ot **A**vailable.	Data is not updated.

Station diag



AF 100 Station : Station diag

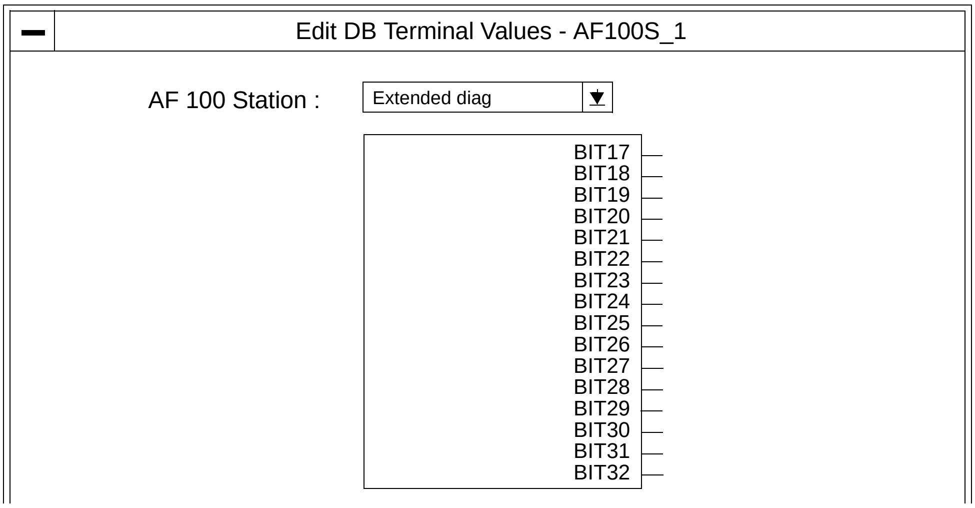
Terminal Description, Station diag

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ACT	system	–	B(r)	Station is **ACT**ive in normal operation mode.	–
SE	system	–	B(r)	**S**evere **E**rror.	Check connected station.

Terminal Description, Station diag (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HWE	system	–	B(r)	**H**ard**W**are **E**rror.	Non-fatal error in the connected station.
SWE	system	–	B(r)	**S**oft**W**are **E**rror.	Check application program in the connected station.
PHE	system	–	B(r)	**P**eripheral **H**ardware **E**rror.	Check hardware in connected station.
PRE	system	–	B(r)	**PR**ocess **E**rror.	Possible I/O hardware or input signal error in the connected station.
CRA	system	–	B(r)	**C**able **R**edundancy **A**vailable.	Station is configured to have redundant media.
RC1	system	–	B(r)	**R**edundant **C**able **1** is bad.	Replace media (cable 1).
RC2	system	–	B(r)	**R**edundant **C**able **2** is bad.	Replace media (cable 2).
RPA	system	–	B(r)	**R**edundant **P**ower **A** failure.	Check power supply unit A.
RPB	system	–	B(r)	**R**edundant **P**ower **B** failure.	Check power supply unit B.
CD	system	–	B(r)	**C**hanged **D**iagnostics.	–
BIT13	system	–	B(r)	**BIT** number **13** of station diagnostics.	Reserved for future use.
BIT14	system	–	B(r)	**BIT** number **14** of station diagnostics.	Reserved for future use.
GE	system	–	B(r)	**G**eneral station **E**rror.	Check connected station.
GW	system	–	B(r)	**G**eneral **W**arning.	Check connected station.

Extended diag



Edit DB Terminal Values - AF100S_1

AF 100 Station : Extended diag

Terminal Description, Extended diag

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BIT17	system	–	B(r/w)	**BIT** number **17** of extended station diagnostics.	Reserved for future use.
: : BIT32	system	–	B(r/w)	**BIT** number **32** of extended station diagnostics.	Reserved for future use.

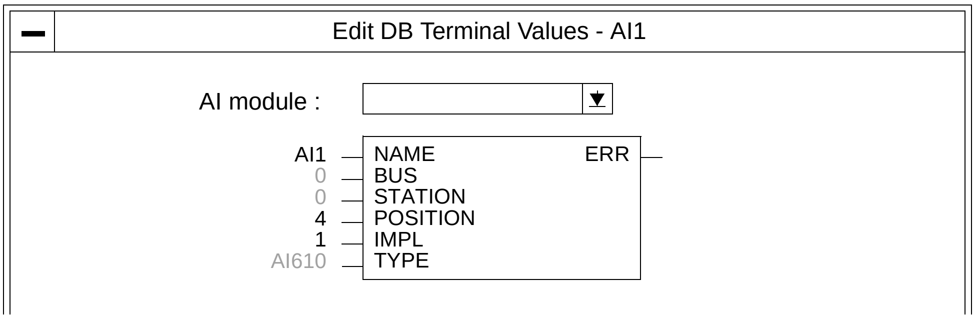
AI module AI610

Summary

AI610 is a module for handling of analog input signals.

The Engineering Station will create:

- 1 data base element of type AI module.
- 32 data base elements of type Analog Input.



Edit DB Terminal Values - AI1

AI module :

AI1 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
AI610 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx	–	Unique module **NAME.**	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI610	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

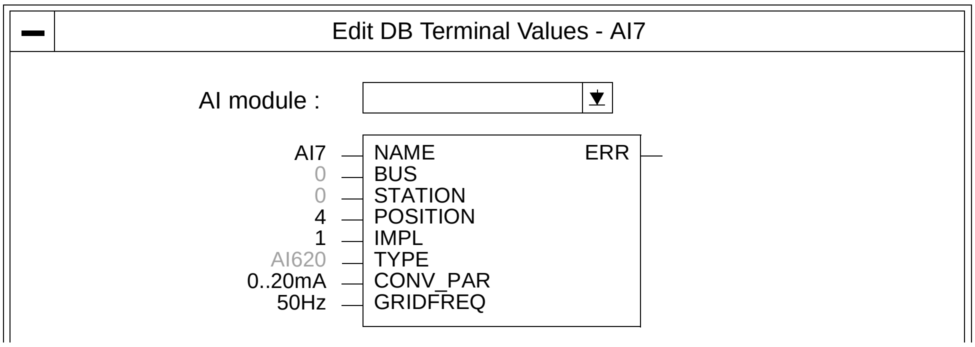
AI module AI620

Summary

AI620 is a module for handling of analog input signals with limit check on the module.

The Engineering Station will create:

- 1 data base element of type AI module.
- 16 data base elements of type Analog Input.



Edit DB Terminal Values - AI7

AI module :

AI7 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
AI620 — TYPE
0..20mA — CONV_PAR
50Hz — GRIDFREQ
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI620	–	Module **TYPE**.	See call name.
CONV_PAR	user	0..20mA	–	The normal signal range can be entered as **CONV**ersion **PAR**ameter. Values: 0..20mA, 4..20mA, -20..20mA, -10..10V	Default value for subordinated signals.
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency suppression filter**.** Values: 16 2/3Hz, 50Hz, 60Hz	Not allowed to change on-line.

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

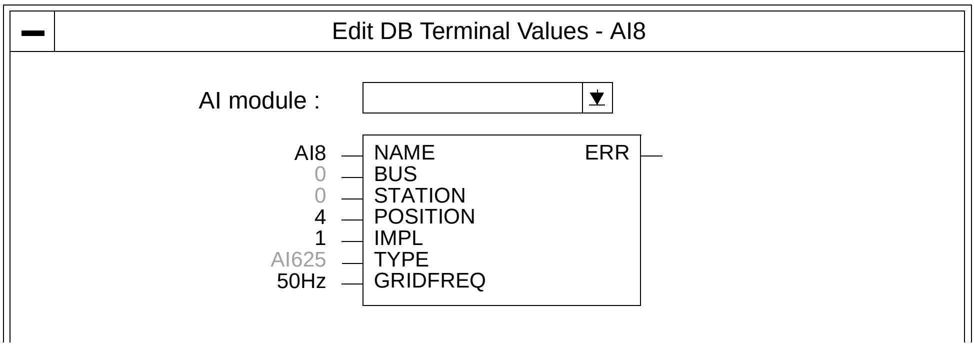
AI module AI625

Summary

AI625 is a module for handling of analog input signals with limit check on the module.

The Engineering Station will create:

- 1 data base element of type AI module.
- 16 data base elements of type Analog Input.



Edit DB Terminal Values - AI8

AI module :

AI8 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
AI625 — TYPE
50Hz — GRIDFREQ
ERR —

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	AIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI625	–	Module **TYPE**.	See call name.
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency suppression filter. Values: 16 2/3Hz, 50Hz, 60Hz	Not allowed to change on-line.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

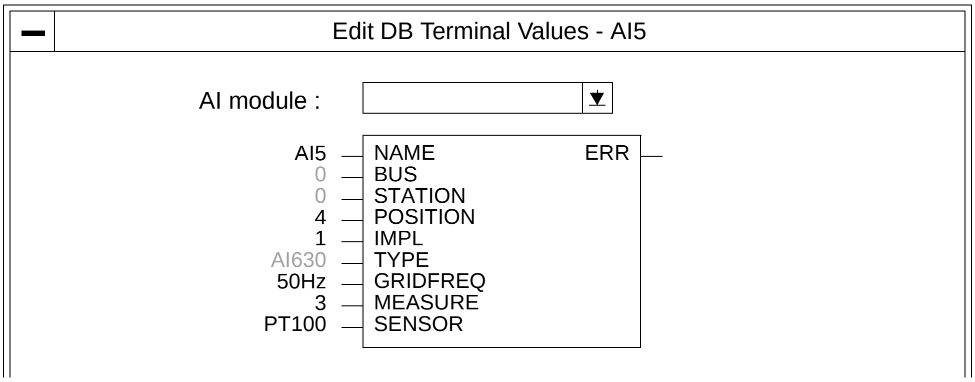
AI module AI630

Summary

AI630 is a module for handling of analog input signals with input type Pt100 or Resistor and limit check on the module.

The Engineering Station will create:

- 1 data base element of type AI module.
- 16 data base elements of type Analog Input.



Edit DB Terminal Values - AI5

AI module :

AI5 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
AI630 — TYPE
50Hz — GRIDFREQ
3 — MEASURE
PT100 — SENSOR
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See section “Address terminals” in chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI630	–	Module **TYPE**.	See call name.
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency suppression filter. Values: 16 2/3Hz, 50Hz, 60Hz	–
MEASURE	user	3	–	Wire **MEASURE**ment. Values: 3, 4	Default value for subordinated signals.

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
SENSOR	user	PT100	–	**SENSOR** Type. Values: RESISTOR (0 to 500Ω), PT100 (-200 to +600°C)	Default value for subordinated signals.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

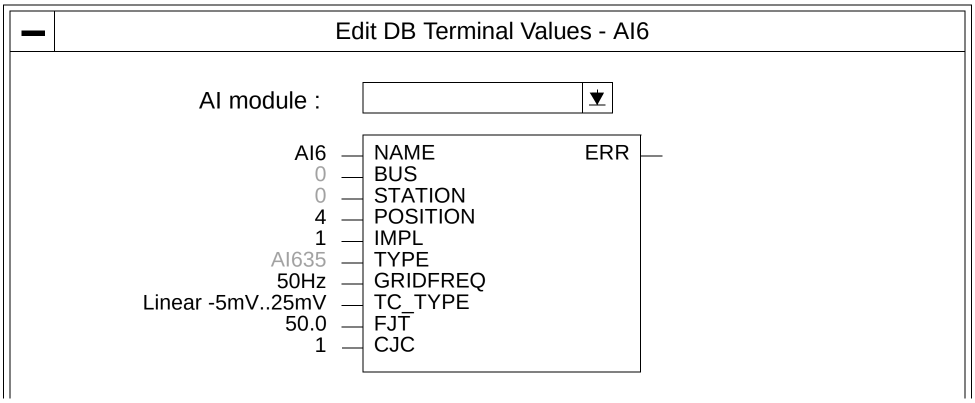
AI module AI635

Summary

AI635 is a module for handling of analog input signals with input type Pt100 or Resistor and limit check on the module.

The Engineering Station will create:

- 1 data base element of type AI module.
- 14 data base elements of type Analog Input.
-



AI6
0
0
4
1
AI635
50Hz
Linear -5mV..25mV
50.0
1

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI635	–	Module **TYPE**.	See call name.
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency suppression filter. Values: 16 2/3Hz, 50Hz, 60Hz	Not allowed to change on-line.

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
TC_TYPE	user	Linear –5mV.. 25mV	–	**T**hermo**C**ouple **TYPE**. Values: Linear –5mV..25mV, Linear –10mV..50mV, Linear –15mV..75mV, Linear –25mV..150mV, R, S, B, J, T, E, K, N, C	See Table 22.
FJT	user	50.0	–	**F**ixed **J**unction **T**emperature.	Range -40.0 to 100.0 °C.
CJC	user	1	–	**C**old **J**unction **C**ompensation. Values: 0, 1, 2, 1&2	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

Thermocouple Types

Table 22. Thermocouple Types

Code	**Thermocouple type**	**Temperature range**	**References**
B	Platinum - 30% Rhodium/Platinum -6% Rhodium, Pt - 30Rh/Pt - 6Rh	600 °C to 1700 °C 50 °C to 1820 °C	IEC 584 NIST
C	Tungsten - 5% Rhenium/Tungsten - 26% Rhenium, W - 5Re/W - 26Re	0 °C to 2300 °C	For example Hoskins Mfg. Co type C, or ARI type AE. This type is not defined in any standards.
E	Nickel - 10% Chromium/Copper - Nickel, Ni - 10Cr/Cu - Ni	-40 °C to 750 °C -210 °C to 760 °C	IEC 584 NIST
J	Iron/Copper - Nickel, Fe/Cu - Ni	-200 °C to 900 °C -270 °C to 1000 °C	IEC 584 NIST
K	Nickel - Chromium/Nickel - Aluminium, Ni - Cr/Ni - Al	-200 °C to 1200 °C -270 °C to 1372 °C	IEC 584 NIST
N	Nickel - Chromium - Silicon/Nickel - Silicon, Nicrosil/Nisil	-200 °C to 1200 °C -270 °C to 1300 °C	IEC 584 NIST

Thermocouples according to IEC 584, tolerance classes 1, 2 and 3 (Europe), or to NIST (U.S.).

AI module AI810, AI820

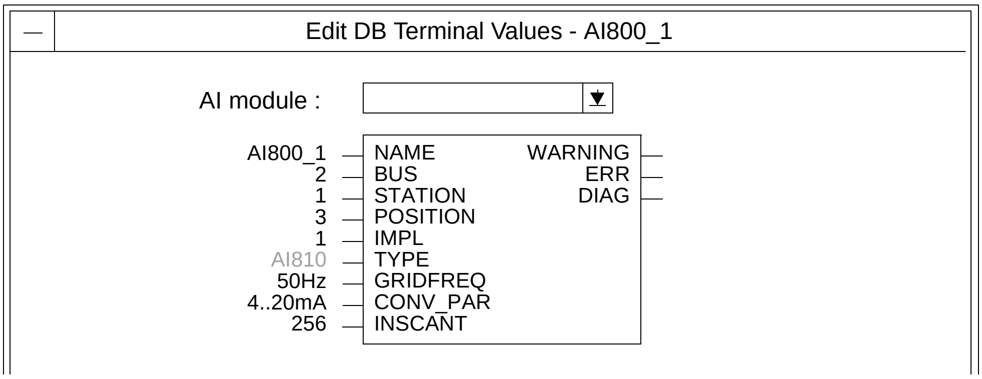
Summary

The AI module data base element specifies an Analog Input hardware module of type AI810 or AI820 contained in an Advant Fieldbus 100 I/O station. The data base element is superior to the signal elements associated to the analog input channels in the module and contains diagnostic information of the I/O module. The following modules are supported:

- AI810: 1 × 8 channels, 12 bit resolution, single ended. Rated isolation 50 V.
- AI820: 4 × 1 channels (differential). 12 bit plus sign. Rated isolation 50 V.

The Engineering Station will create:

- 1 data base element of type AI module
- 8 (AI810) or 4 (AI820) data base elements of type Analog Input.



```
AI module :

 AI800_1 — NAME          WARNING —
       2 — BUS               ERR —
       1 — STATION          DIAG —
       3 — POSITION
       1 — IMPL
   AI810 — TYPE
    50Hz — GRIDFREQ
 4..20mA — CONV_PAR
     256 — INSCANT
```

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AI800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
TYPE	predef	AI810/ AI820	–	Module **TYPE** designation.	–
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency**.** Values: 16 2/3Hz, 50Hz, 60Hz	–
CONV_PAR	user	4..20mA	–	**CONV**ersion **PAR**ameter. Default value for the I/O signal elements.	See table “Conversion Parameter”.
INSCANT	user	256	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Signal Ranges

Conversion Parameter

AI810

Voltage	0..10V	0..10V,LL	2..10V	2..10V,LL
Current	0..20mA	4..20mA,LL	4..20mA	4..20mA,LL

AI820

Voltage	–10..10V	0..10V	0..10V,LL	2..10V	2..10V,LL	–5..5V	0..5V	0..5V,LL	1..5V	1..5V,LL
Current	–20..20mA	0..20mA	0..20mA,LL	4..20mA	4..20mA,LL					

About Lower Limit (,LL)

The raw signal (not signal conditioned) value is always limited to the lowest value given by the signal range. This means that if the raw signal value is below this limit it will be set to the low limit value, before performing the signal conditioning.

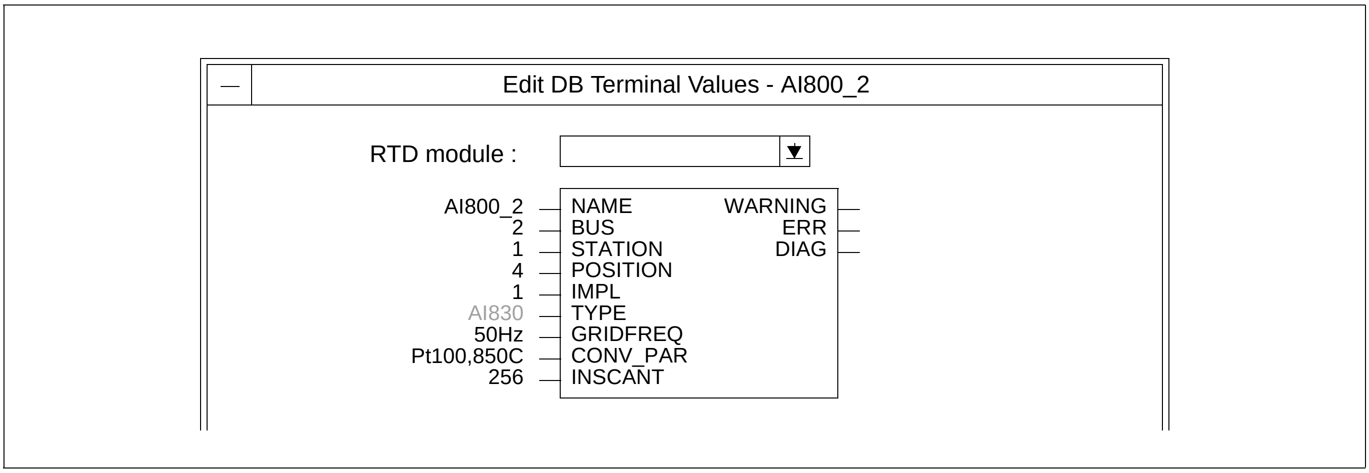
RTD module AI830

Summary

The RTD module data base element specifies an Analog Input RTD hardware module of type AI830 contained in an Advant Fieldbus 100 I/O station. The data base element is superior to the signal elements associated to the RTD input channels in the module and contains diagnostic information of the I/O module.

The Engineering Station will create:

- 1 data base element of type RTD module
- 8 data base elements of type RTD Input.



AI800_2 — NAME
2 — BUS
1 — STATION
4 — POSITION
1 — IMPL
AI830 — TYPE
50Hz — GRIDFREQ
Pt100,850C — CONV_PAR
256 — INSCANT

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AI800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI830	–	Module **TYPE** designation.	–
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency**.** Values: 50Hz, 60Hz	–

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC con- nection data type	Description	Remarks
CONV_PAR	user	Pt100, 850C	–	**CONV**ersion **PAR**ameter. Default value for the I/O signal elements: See the table “Conversion Parameters” below.	Modification denied after creation.
INSCANT	user	256	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Conversion Parameters

Value (1)	Range	Value (1)	Range
Pt100,80C	-80 to 80 °C	Pt100,176F	-112 to 176 °F
Pt100,250C	-112 to 250 °C	Pt100,482F	-328 to 482 °F
Pt100,850C	-200 to 850 °C	Pt100,1562F	-328 to 1562 °F
Ni100,180C	-60 to 180 °C	Ni100,356F	-76 to 356 °F
Ni120,260C	-80 to 260 °C	Ni120,500F	-112 to 500 °F
Cu10,260C	-100 to 260 °C	Cu10,500F	-142 to 500 °F
Resistor,400	0 to 400 Ω	–	–

(1) All values include a comma

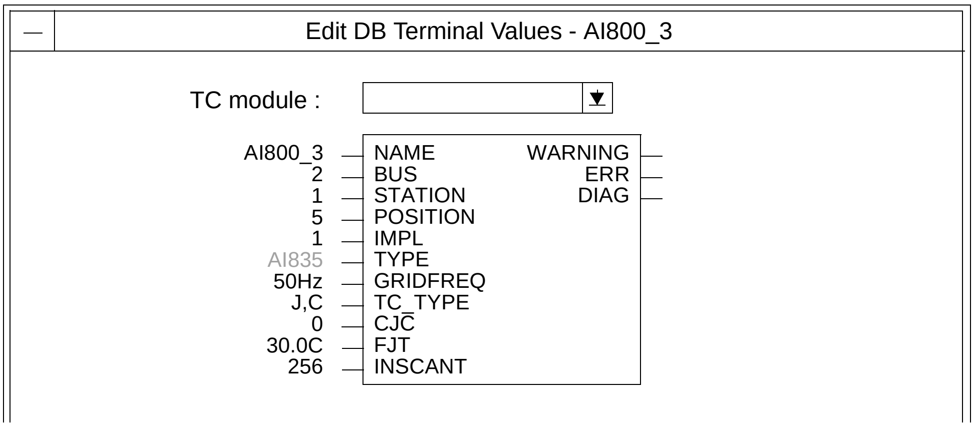
TC module AI835

Summary

The TC module data base element specifies an Analog Input TC hardware module of type AI835 contained in an Advant Fieldbus 100 I/O station. The data base element is superior to the signal elements associated to the TC input channels in the module and contains diagnostic information of the I/O module.

The Engineering Station will create:

- 1 data base element of type TC module
- 8 data base elements of type TC Input.



Edit DB Terminal Values - AI800_3

TC module :

AI800_3 — NAME
2 — BUS
1 — STATION
5 — POSITION
1 — IMPL
AI835 — TYPE
50Hz — GRIDFREQ
J,C — TC_TYPE
0 — CJC
30.0C — FJT
256 — INSCANT

WARNING —
ERR —
DIAG —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AI800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AI835	–	Module **TYPE** designation.	–

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency. Values: 50Hz, 60Hz	–
TC_TYPE	user	J,C	–	**T**hermo**C**ouple **TYPE**. Default value for the I/O signal elements. Values: See Table 23 below.	Both for Celsius and Fahrenheit. Modification denied after creation.
CJC	user	0	–	**C**old **J**unction **C**ompensation. Values: 0=Cold Junction Compensation 1=Fixed Junction Compensation	Modification denied after creation.
FJT	user	30.0C	–	**F**ixed **J**unction **T**emperature. Values: -40.0C to 100.0C or -40.0F to 212.0F	–
INSCANT	user	256	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Thermocouple Types

Table 23. Thermocouple Types

Value (1)	Range	Value (1)	Range
B,C	0 to 1820 °C	B,F	32 to 3308 °F
C,C	0 to 2300 °C	C,F	32 to 4172 °F
E,C	-270 to 1000 °C	E,F	-454 to 1832 °F
J,C	-210 to 1200 °C	J,F	-346 to 2192 °F
K,C	-270 to 1372 °C	K,F	-454 to 2501.6 °F
N,C	-270 to 1300 °C	N,F	-454 to 2372 °F
R,C	-50 to 1769 °C	R,F	-58 to 3216.2 °F
S,C	-50 to 1769 °C	S,F	-60 to 3216.2 °F
T,C	-270 to 400 °C	T,F	-454 to 752 °F
Pt100,C	-40 to 100 °C	Pt100,F	-40 to 212 °F

(1) All values include a comma

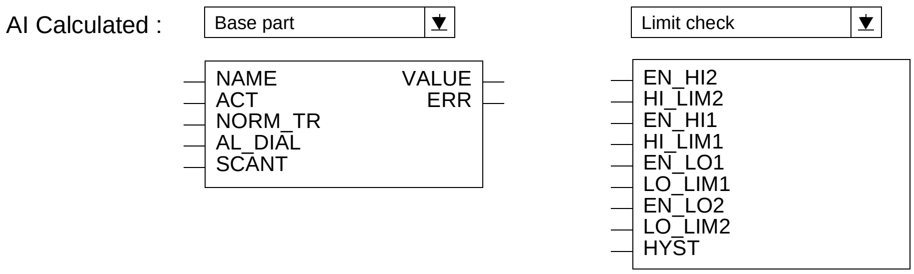
AI Calculated AIC

Summary

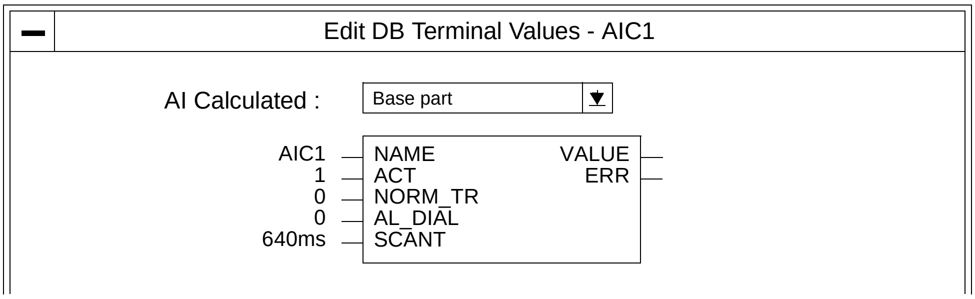
The AI Calculated element is an event channel element used for detection of calculated analog events. An event is detected when the real value (terminal VALUE) exceeds one of the two high or low limits or moves back into the range.

The hysteresis parameter (terminal HYST) can be used to suppress event generation if the value is fluctuating around a limit.

Overview



Base part



AIC1 — NAME
1 — ACT
0 — NORM_TR
0 — AL_DIAL
640ms — SCANT

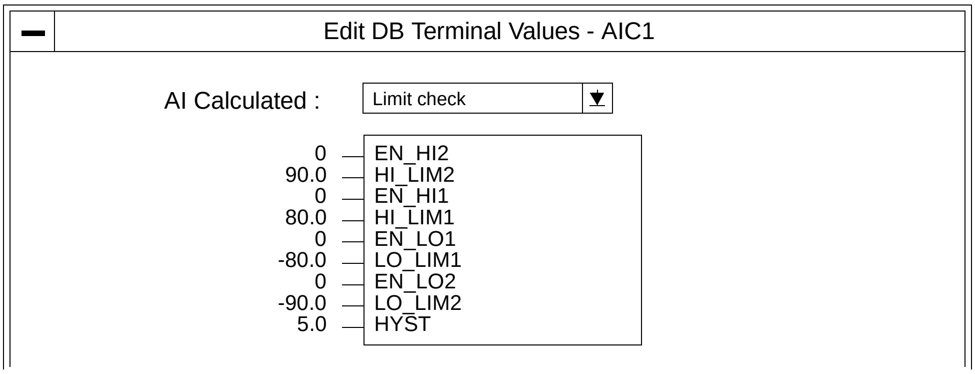
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AICx	–	Unique **NAME** of the event channel.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	Element must be referenced by an EVS(S) when ACT=1.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NORM_TR	user/PC	0	B(r/w)	**NORM**al **TR**eatment. 0=event detection disabled 1=event detection enabled	Not allowed to change on-line.
AL_DIAL	user	0	–	**DIAL** the master on **AL**arm. 0=no dial on alarm 1=dial on alarm	RCOM only.
SCANT	user	640ms	–	**SCAN T**ime for event recording. Values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
VALUE	PC	0	R(r/w)	Signal **VALUE** (is watched for events).	–

Limit check



Edit DB Terminal Values - AIC1

AI Calculated : Limit check

0 — EN_HI2
90.0 — HI_LIM2
0 — EN_HI1
80.0 — HI_LIM1
0 — EN_LO1
-80.0 — LO_LIM1
0 — EN_LO2
-90.0 — LO_LIM2
5.0 — HYST

Terminal Description, Limit check

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EN_HI2	user/PC	0	B(r/w)	**EN**ables **HI**gh limit no. **2** for event generation. 0=disable 1=enable	Not allowed to change on-line.
HI_LIM2	user/PC	90.0	R(r/w)	**HI**gh **LIM**it no. **2** for event generation of VALUE.	Not allowed to change on-line.

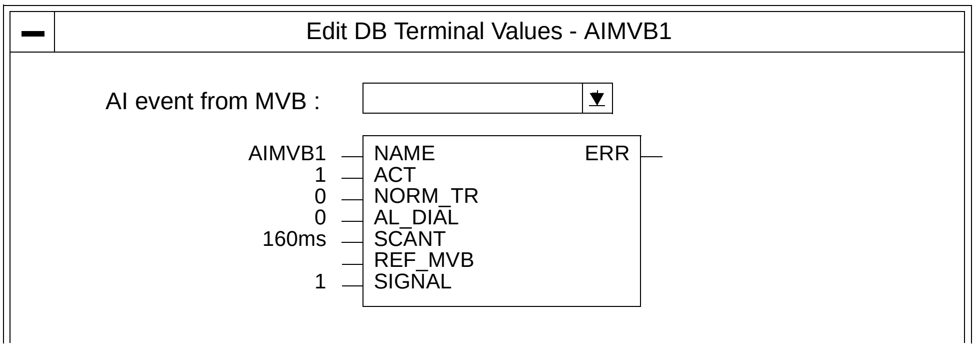
Terminal Description, Limit check (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EN_HI1	user/PC	0	B(r/w)	**EN**ables **HI**gh limit no. **1** for event generation. 0=disable 1=enable	Not allowed to change on-line.
HI_LIM1	user/PC	80.0	R(r/w)	**HI**gh **LIM**it no. **1** for event generation of VALUE.	Not allowed to change on-line.
EN_LO1	user/PC	0	B(r/w)	**EN**ables **LO**w limit no. **1** for event generation. 0=disable 1=enable	Not allowed to change on-line.
LO_LIM1	user/PC	–80.0	R(r/w)	**LO**w **LIM**it no. **1** for event generation of VALUE.	Not allowed to change on-line.
EN_LO2	user/PC	0	B(r/w)	**EN**ables **LO**w limit no. **2** for event generation. 0=disable 1=enable	Not allowed to change on-line.
LO_LIM2	user/PC	–90.0	R(r/w)	**LO**w **LIM**it no. **2** for event generation of VALUE.	Not allowed to change on-line.
HYST	user/PC	5.0	R(r/w)	**HYST**eresis for limit check.	≥0.0 Not allowed to change on-line.

AI event from MVB AIMVB

Summary

The element AI event from MVB extracts event data from an MVI Data Block element.



Edit DB Terminal Values - AIMVB1

AI event from MVB :

```
   AIMVB1 —  NAME          ERR —
        1 —  ACT
        0 —  NORM_TR
        0 —  AL_DIAL
    160ms —  SCANT
          —  REF_MVB
        1 —  SIGNAL
```

Terminal Description

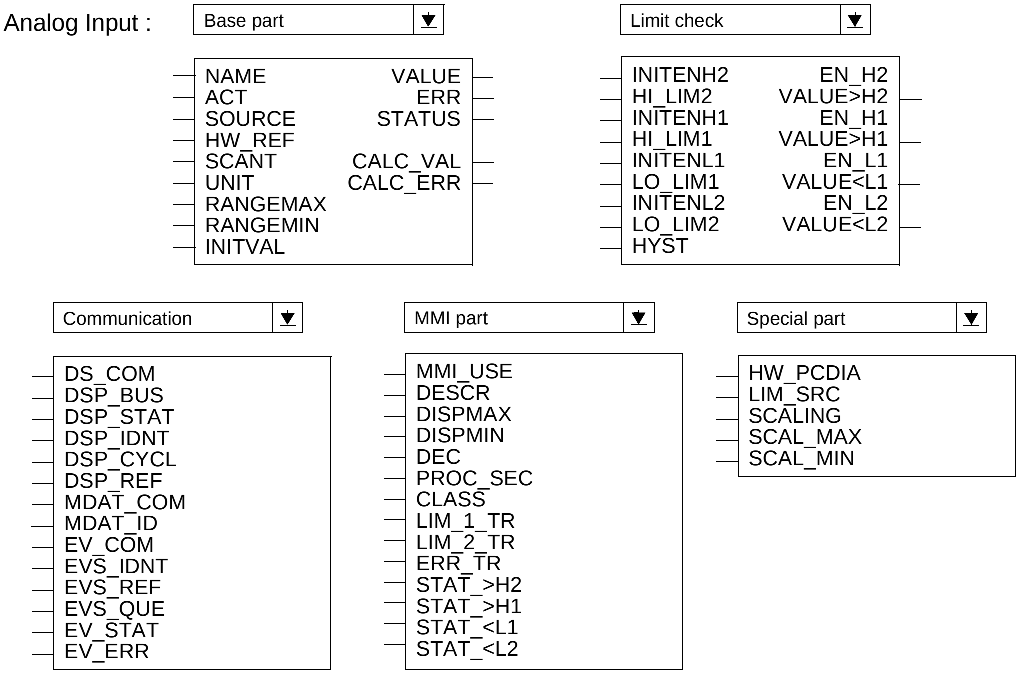
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIMVBx	–	Unique **NAME** of the event channel.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
NORM_TR	user/PC	0	B(r/w)	**NORM**al **TR**eatment. 0=event detection disabled 1=event detection enabled	Not allowed to change on-line.
AL_DIAL	user	0	–	**DIAL** the master on **AL**arm. 0=no dial on alarm 1=dial on alarm	RCOM only.
SCANT	user	160ms	–	**SCAN T**ime for event recording. Values: 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
REF_MVB	user	*	–	**REF**erence by name to the **MV**I Data **B**lock from which event data is recorded.	–
SIGNAL	user	1	–	Number of **SIGNAL** of which event data will be recorded.	Range 1–4.
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–

Analog Input AIS

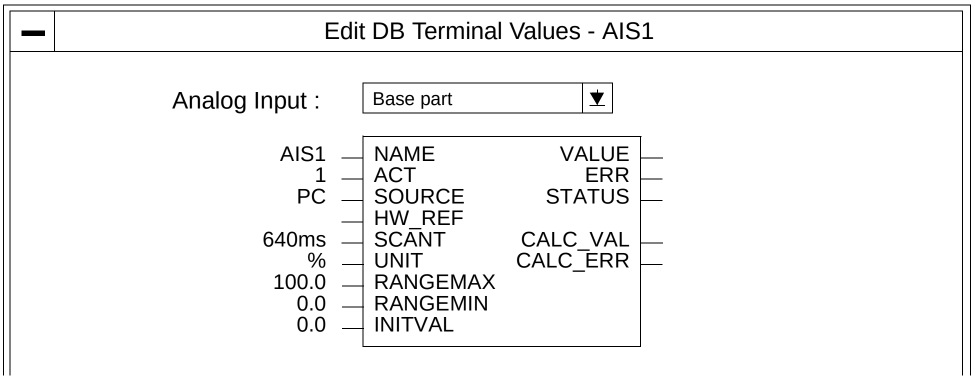
Summary

This Analog Input data base element represents an extended AI object.

Overview



Base part



Edit DB Terminal Values - AIS1

Analog Input : Base part

```
   AIS1 — NAME          VALUE —
      1 — ACT             ERR —
     PC — SOURCE       STATUS —
        — HW_REF
  640ms — SCANT      CALC_VAL —
      % — UNIT       CALC_ERR —
  100.0 — RANGEMAX
    0.0 — RANGEMIN
    0.0 — INITVAL
```

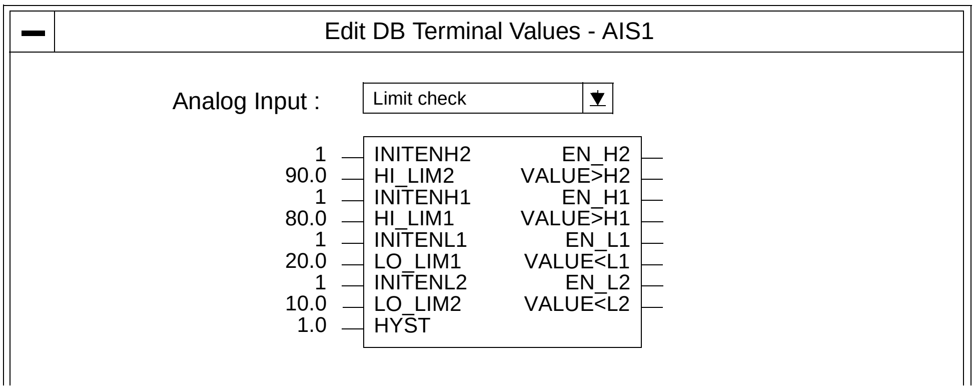
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AISx	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: HW, PC, RECEIVE, MMI.	HW: Value is fetched from a analog input signal element, terminal HW_REF points to the element. PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
HW_REF	user	*	–	**REF**erence to the **H**ard**W**are.	Used if SOURCE = HW.
SCANT	user	640ms	–	**SCAN T**ime for event detection and data acquisition time. Allowed values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
UNIT	user	%	–	The signal **UNIT** in engineering units.	Max. 6 characters.
RANGEMAX	user	100.0	–	**RANGE MAX**imum input in engineering units (for example 100 kg) for maximum input signal (for example 20mA).	–

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
RANGEMIN	user	0.0	–	**RANGE MIN**imum input in engineering units (for example 0 kg) for minimum input signal (for example 4mA).	–
INITVAL	user	0.0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	R(r)	Process **VALUE**. Read by PC program if SOURCE = PC.	If SCALING = CONTROLLER and HW_PCDIA = NO: In engineering units, else defined by HW module used, for example, AI610.
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
STATUS	system	–	IL(r)	**STATUS** information.	Status bits described in chapter introduction.
CALC_VAL	system	–	R(r/w)	**CALC**ulated **VAL**ue.	To be provided by PC program if SOURCE = PC.
CALC_ERR	system	–	B(r/w)	**CALC**ulated software **ERR**or.	To be provided by PC program if SOURCE = PC.

Limit check



Edit DB Terminal Values - AIS1

Analog Input : Limit check

1 INITENH2 EN_H2
90.0 HI_LIM2 VALUE>H2
1 INITENH1 EN_H1
80.0 HI_LIM1 VALUE>H1
1 INITENL1 EN_L1
20.0 LO_LIM1 VALUE<L1
1 INITENL2 EN_L2
10.0 LO_LIM2 VALUE<L2
1.0 HYST

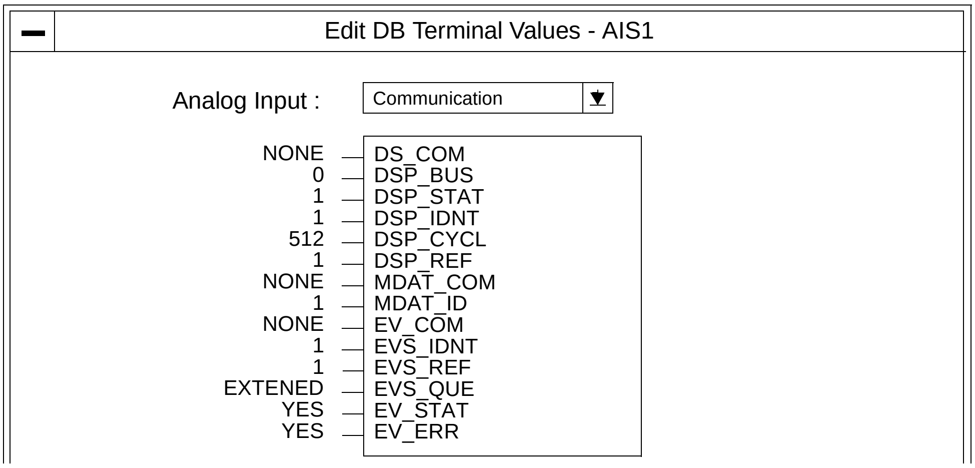
Terminal Description, Limit check

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
INITENH2	user	1	–	**INIT**ial value for **EN_H2**. 0=disable 1=enable	–
HI_LIM2	user	90.0	–	**HI**gh **LIM**it no. **2**.	LIM_SRC=SW: engineering units. LIM_SRC=HW: depending on hardware type used, for example, AI610.
INITENH1	user	1	–	**INIT**ial value for **EN_H1**. 0=disable 1=enable	–
HI_LIM1	user	80.0	–	**HI**gh **LIM**it no. **1**.	LIM_SRC=SW: engineering units. LIM_SRC=HW: depending on hardware type used, for example, AI610.
INITENL1	user	1	–	**INIT**ial value for **EN_L1**. 0=disable 1=enable	–
LO_LIM1	user	20.0	–	**LO**w **LIM**it no. **1**.	LIM_SRC=SW: engineering units. LIM_SRC=HW: depending on hardware type used, for example, AI610.
INITENL2	user	1	–	**INIT**ial value for **EN_L2**. 0=disable 1=enable	–
LO_LIM2	user	10.0	–	**LO**w **LIM**it no. **2**.	LIM_SRC=SW: engineering units. LIM_SRC=HW: depending on hardware type used, for example, AI610.
HYST	user	1.0	–	**HYST**eresis for limit check.	≥0.0
EN_H2	system/ PC	–	B(r/w)	**EN**ables limit check for **H**igh limit **2** is 1=**EN**abled 0=disabled	–
VALUE>H2	system	–	B(r)	**VALUE** has exceeded **H**igh limit **2**.	–

Terminal Description, Limit check (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EN_H1	system/ PC	–	B(r/w)	Limit check for **H**igh limit **1** is 1=**EN**abled 0=disabled	–
VALUE>H1	system	–	B(r)	**VALUE** has exceeded **H**igh limit **1**.	–
EN_L1	system/ PC	–	B(r/w)	Limit check for **L**ow limit **1** is 1=**EN**abled 0=disabled	–
VALUE<L1	system	–	B(r)	**VALUE** has fallen below **L**ow limit **1**.	–
EN_L2	system/ PC	–	B(r/w)	Limit check for **L**ow limit **2** is 1=**EN**abled 0=disabled	–
VALUE<L2	system	–	B(r)	**VALUE** has fallen below **L**ow limit **2**.	–

Communication



Edit DB Terminal Values - AIS1

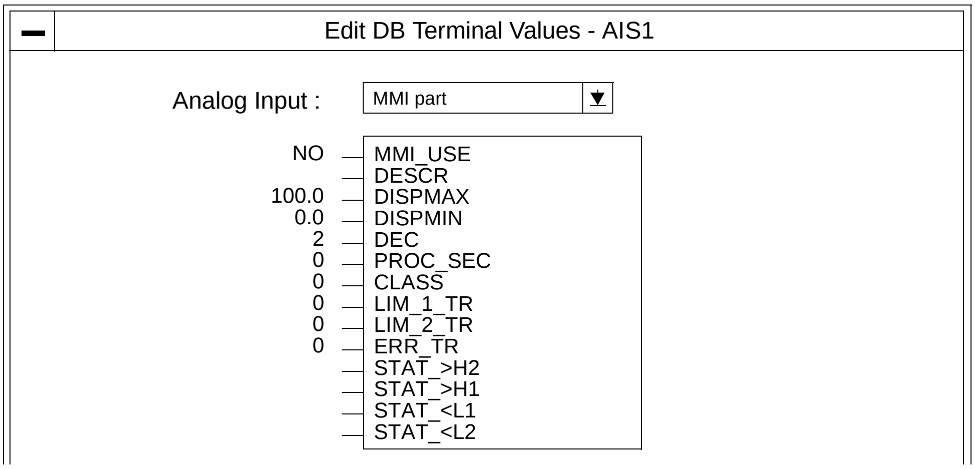
Analog Input : Communication

NONE	DS_COM
0	DSP_BUS
1	DSP_STAT
1	DSP_IDNT
512	DSP_CYCL
1	DSP_REF
NONE	MDAT_COM
1	MDAT_ID
NONE	EV_COM
1	EVS_IDNT
1	EVS_REF
EXTENED	EVS_QUE
YES	EV_STAT
YES	EV_ERR

Terminal Description, Communication

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of the first of two **DAT** elements within the DSP element.	Range 1–7
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.
MDAT_ID	user	1	–	**ID**ent of the first of two **MDAT** elements.	1–199
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32
EVS_QUE	user	EXTENDED	–	Specifies the **QUE**ue size of the **EV**ent **S**et element. Values: NORMAL (100 entries), EXTENDED (500 entries)	–
EV_STAT	user	YES	–	Generate **EV**ents for **STAT**us changes. Values: YES, NO.	Events are generated for Acknowledgement, alarm blocking and forcing.
EV_ERR	user	YES	–	Generate **EV**ents if an **ERR**or occurs. Values: YES, NO.	See chapter introduction for error conditions that generate events.

MMI part



Edit DB Terminal Values - AIS1

Analog Input : MMI part

NO	MMI_USE
	DESCR
100.0	DISPMAX
0.0	DISPMIN
2	DEC
0	PROC_SEC
0	CLASS
0	LIM_1_TR
0	LIM_2_TR
0	ERR_TR
	STAT_>H2
	STAT_>H1
	STAT_<L1
	STAT_<L2

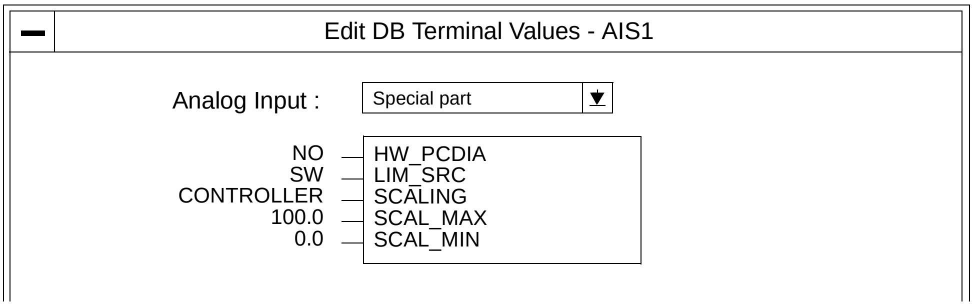
Terminal Description, MMI part

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
MMI_USE	user	NO	–	Mark object for **MMI USE**.	–
DESCR	user		–	Signal **DESCR**iption.	–
DISPMAX	user	100.0	–	**MAX**imum value **DISP**layed on screen.	Derives scaling for screen.
DISPMIN	user	0.0	–	**MIN**imum value **DISP**layed on screen.	Derives scaling for screen.
DEC	user	2	–	Number of **DEC**imals to be presented by Operator Station.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1 to 16
CLASS	user	0	–	**CLASS** subdivides process section. Used by status list function in Operator Station.	Range -128 to +127
LIM_1_TR	user	0	–	**LIM**it **TR**eatment for H**1** and L**1**.	Recommended settings: 0 = no event reporting 3 = event reporting, no alarm handling 4 = event reporting & alarm handling

Terminal Description, MMI part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
LIM_2_TR	user	0	–	**LIM**it **TR**eatment for H**2** and L**2**.	Recommended settings: 0 = no event reporting 3 = event reporting, no alarm handling 4 = event reporting & alarm handling
ERR_TR	user	0	–	**ERR**or **TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
STAT_>H2	user		–	**STAT**us of terminal VALUE**>H2**.	Max. 20 characters.
STAT_>H1	user		–	**STAT**us of terminal VALUE**>H1**.	Max. 20 characters.
STAT_<L1	user		–	**STAT**us of terminal VALUE**<L1**.	Max. 20 characters.
STAT_<L2	user		–	**STAT**us of terminal VALUE**<L2**.	Max. 20 characters.

Special part



NO — HW_PCDIA
SW — LIM_SRC
CONTROLLER — SCALING
100.0 — SCAL_MAX
0.0 — SCAL_MIN

Terminal Description, Special part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HW_PCDIA	user	NO	–	**PC** element uses **DI**rect **A**ccess to the **H**ard**W**are. Values: NO, YES.	If SOURCE = HW. See chapter below.
LIM_SRC	user	SW	–	**S**ou**RC**e for **LIM**it check. Values: HW, SW, NONE.	See chapter below.

Terminal Description, Special part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
SCALING	user	CONTROLLER	–	Defines if and where the **SCALING** to engineering units is done. Values: CONTROLLER, MMI, NONE.	CONTROLLER: Scaling is done in the controller. MMI: Scaling is done in the MMI. Controller uses units setup in the module. NONE: No scaling.
SCAL_MAX	user	100.0	–	**SCAL**ing **MAX**imum value.	If hardware does not scale to 0–100%, these terminals have to set, see “Scaling of VALUE Terminal” below.
SCAL_MIN	user	0.0	–	**SCAL**ing **MIN**imum value.	

Scaling of VALUE Terminal

$\text{VALUE} = \mathit{factor} \times \mathit{hardware\ value} + \mathit{offset}$

where *hardware value* = provided by HW module, $\mathit{offset} = -\mathit{factor} \times \text{SCAL\_MIN} + \text{RANGEMIN}$,

$\mathit{factor} = (\text{RANGEMAX} - \text{RANGEMIN})/(\text{SCAL\_MAX} - \text{SCAL\_MIN})$.

HW_PCDIA Terminal

Terminal HW_PCDIA specifies how the value is fetched from the hardware (if terminal SOURCE = HW).

HW_PCDIA = YES:
Each consumer of the value (CONTRMs) fetches the value directly via the BIOB address from the hardware or from the PC element or from the data base element.

HW_PCDIA = NO:
The value is fetched from the AIS element and provided in terminal VALUE.

LIM_SRC Terminal

Terminal LIM_SRC specifies how the limit check is done.

LIM_SRC = HW:
The result of the limit check performed on the hardware module (if possible) is used, and the events are generated using the boolean limit states provided by the module.

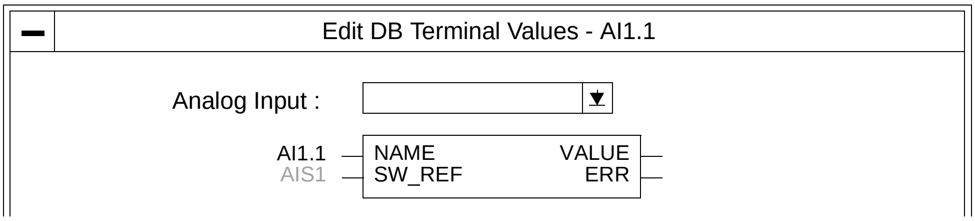
LIM_SRC = SW:
The limit check is performed within the data base element through a modified AIC element. Limit states of the hardware module are ignored.

LIM_SRC = NONE:
Limits are not checked.

Analog Input AIS610

Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI610 hardware module.



Edit DB Terminal Values - AI1.1

Analog Input :

Terminal Description

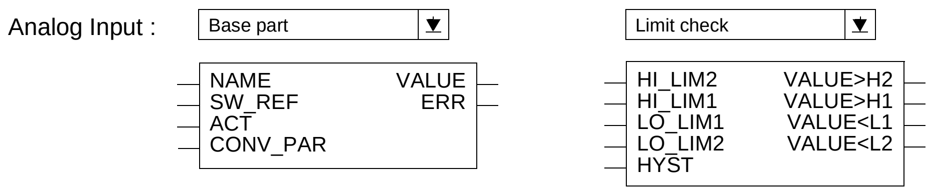
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
VALUE	system	–	R(r)	Process **VALUE** in percent.	Range 0–100%
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal out of range	–

Analog Input AIS620

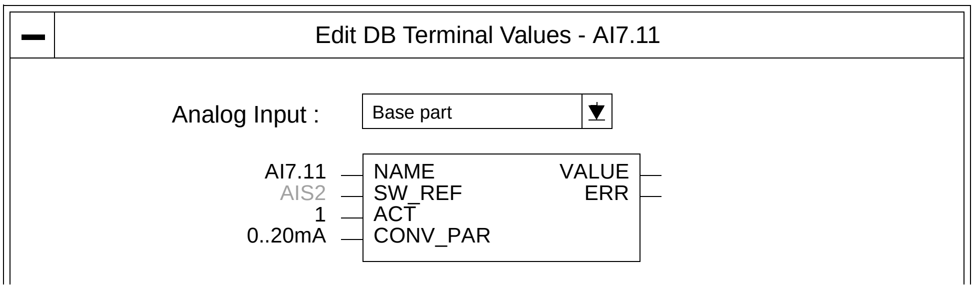
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI620 hardware module.

Overview



Base part



AI7.11 — NAME
AIS2 — SW_REF
1 — ACT
0..20mA — CONV_PAR

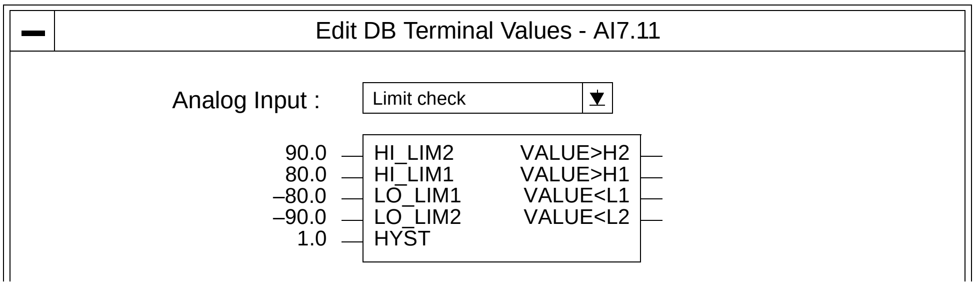
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
CONV_PAR	user	0..20mA	–	The normal signal range can be entered as **CONV**ersion **PAR**ameter. Values: 0..20mA, 4..20mA, –20..20mA, –10..10V	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE	system	–	R(r)	Process **VALUE** in percent.	Range 0–100%, -100–100%
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal out of range	–

Limit check



Edit DB Terminal Values - AI7.11

Analog Input : Limit check

90.0 — HI_LIM2
80.0 — HI_LIM1
–80.0 — LO_LIM1
–90.0 — LO_LIM2
1.0 — HYST

Terminal Description, Limit check

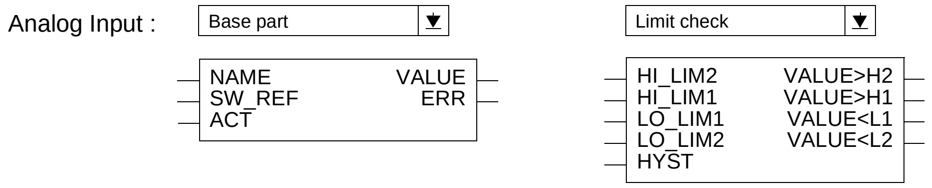
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
HI_LIM2	user	90.0	–	**HI**gh **LIM**it no. **2** (in percent).	–
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
HI_LIM1	user	80.0	–	**HI**gh **LIM**it no. **1** (in percent).	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
LO_LIM1	user	–80.0	–	**LO**w **LIM**it no. **1** (in percent).	–
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
LO_LIM2	user	–90.0	–	**LO**w **LIM**it no. **2** (in percent).	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**.	–
HYST	user	1.0	–	**HYST**eresis for limit check.	–

Analog Input AIS625

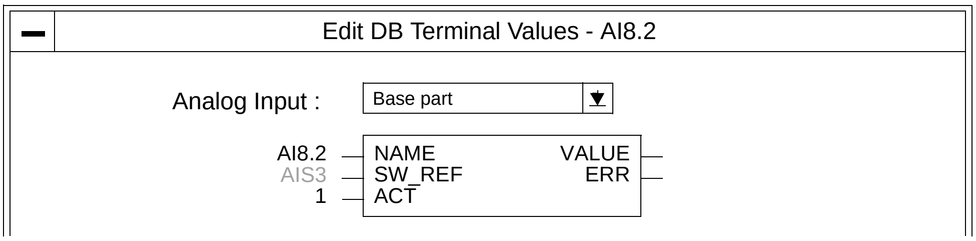
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI625 hardware module.

Overview



Base part

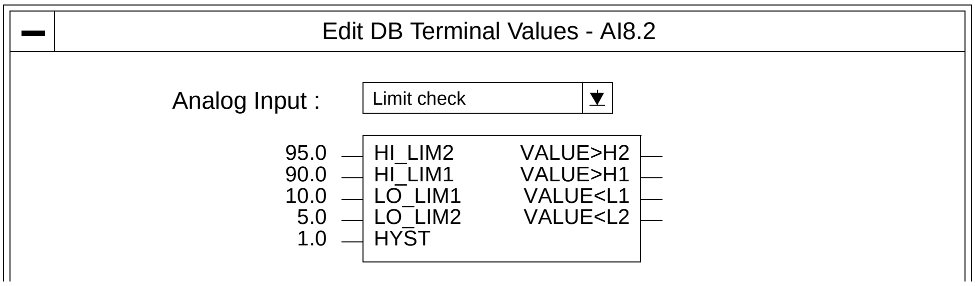


AI8.2 — NAME
AIS3 — SW_REF
1 — ACT

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	AIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
VALUE	system	–	R(r)	Process **VALUE (**in percent).	Range 0–100%
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal out of range	–

Limit check



Edit DB Terminal Values - AI8.2

Analog Input : Limit check

```
95.0 — HI_LIM2     VALUE>H2 —
90.0 — HI_LIM1     VALUE>H1 —
10.0 — LO_LIM1     VALUE<L1 —
 5.0 — LO_LIM2     VALUE<L2 —
 1.0 — HYST
```

Terminal Description, Limit check

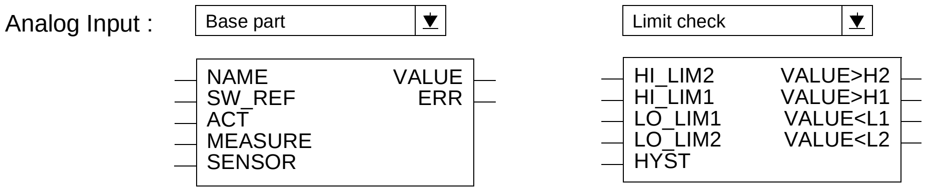
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HI_LIM2	user	95.0	–	**HI**gh **LIM**it no. **2** (in percent).	–
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
HI_LIM1	user	90.0	–	**HI**gh **LIM**it no. **1** (in percent).	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
LO_LIM1	user	10.0	–	**LO**w **LIM**it no. **1** (in percent).	–
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
LO_LIM2	user	5.0	–	**LO**w **LIM**it no. **2** (in percent).	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**.	–
HYST	user	1.0	–	**HYST**eresis for limit check.	–

Analog Input AIS630

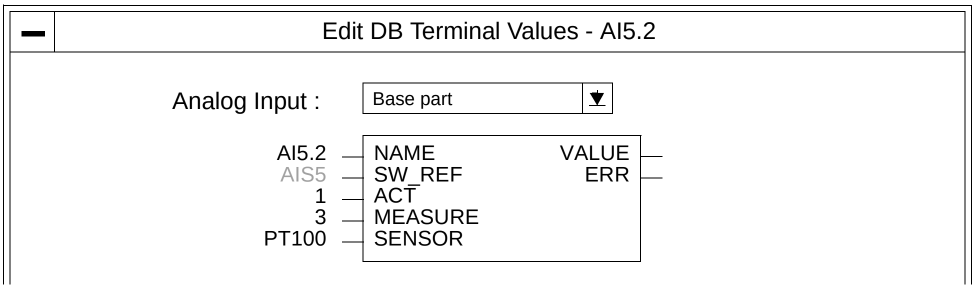
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI630 hardware module.

Overview



Base part



AI5.2 — NAME
AIS5 — SW_REF
1 — ACT
3 — MEASURE
PT100 — SENSOR

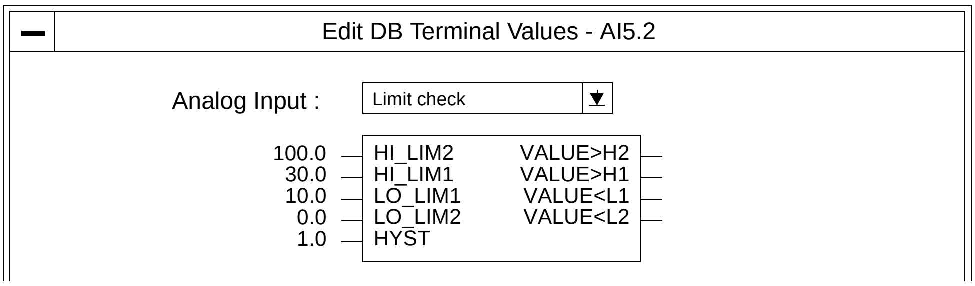
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
MEASURE	user	3	–	Wire **MEASURE**ment. Values: 3, 4	Default value for sub-ordinated signals.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
SENSOR	user	PT100	–	**SENSOR** Type. Values: RESISTOR (0 to 500 Ω), PT100 (-200 to +600 °C)	Default value for subordinated signals.
VALUE	system	–	R(r)	Process **VALUE** in °C or Ω.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal out of range	–

Limit check



Edit DB Terminal Values - AI5.2

Analog Input : Limit check

100.0 HI_LIM2
30.0 HI_LIM1
10.0 LO_LIM1
0.0 LO_LIM2
1.0 HYST

VALUE>H2
VALUE>H1
VALUE<L1
VALUE<L2

Terminal Description, Limit check

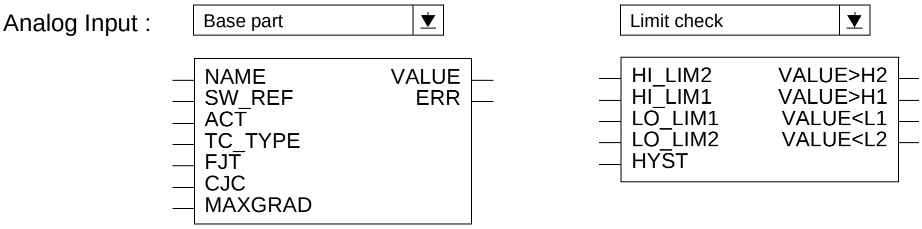
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
HI_LIM2	user	95.0	–	**HI**gh **LIM**it no. **2** (in percent).	–
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
HI_LIM1	user	90.0	–	**HI**gh **LIM**it no. **1** (in percent).	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
LO_LIM1	user	10.0	–	**LO**w **LIM**it no. **1** (in percent).	–
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
LO_LIM2	user	5.0	–	**LO**w **LIM**it no. **2** (in percent).	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**.	–
HYST	user	1.0	–	**HYST**eresis for limit check.	–

Analog Input AIS635

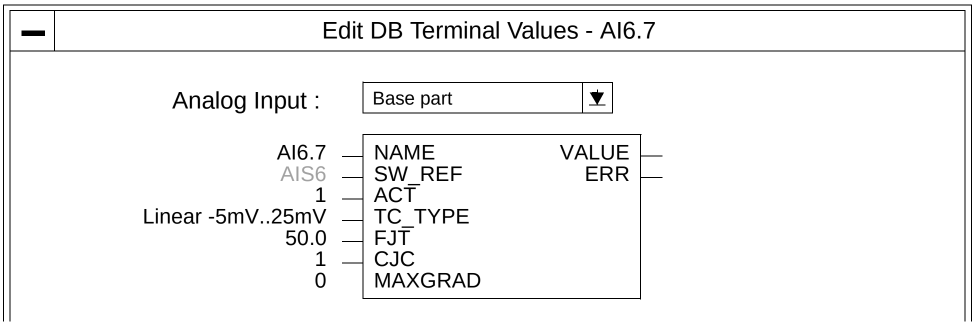
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI636 hardware module.

Overview



Base part



AI6.7 NAME
AIS6 SW_REF
1 ACT
Linear -5mV..25mV TC_TYPE
50.0 FJT
1 CJC
0 MAXGRAD

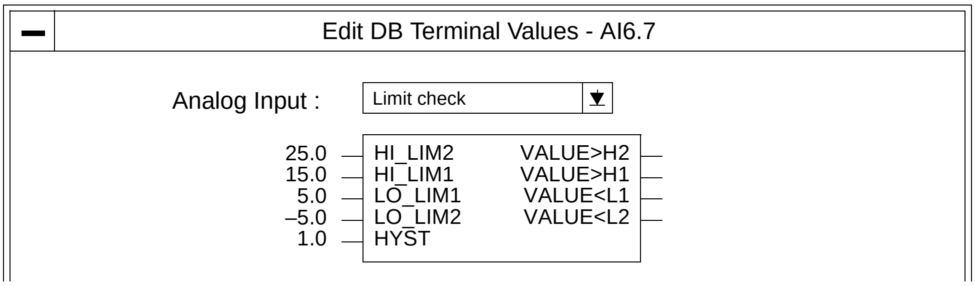
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
TC_TYPE	user	Linear –5mV.. 25mV	–	**T**hermo**C**ouple **TYPE**. Values: Linear –5mV..25mV, Linear –10mV..50mV, Linear –15mV..75mV, Linear –25mV..150mV, R, S, B, J, T, E, K, N, C	See Table 22.
FJT	user	50.0	–	**F**ixed **J**unction **T**emperature.	Range -40.0 to 100.0 °C
CJC	user	1	–	**C**old **J**unction **C**ompensation. Values: 0, 1, 2, 1&2	–
MAXGRAD	user	0	–	**MAX**imal **GRAD**ient in units/sec to accept the measured value as correct.	Range 0–32767
VALUE	system	–	R(r)	Process **VALUE** in °C or mV.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal out of range	–

Limit check



Analog Input : Limit check

25.0 — HI_LIM2
15.0 — HI_LIM1
5.0 — LO_LIM1
–5.0 — LO_LIM2
1.0 — HYST
VALUE>H2 —
VALUE>H1 —
VALUE<L1 —
VALUE<L2 —

Terminal Description, Limit check

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
HI_LIM2	user	25.0	–	**HI**gh **LIM**it no. **2** (in percent).	–
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
HI_LIM1	user	15.0	–	**HI**gh **LIM**it no. **1** (in percent).	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
LO_LIM1	user	5.0	–	**LO**w **LIM**it no. **1** (in percent).	–

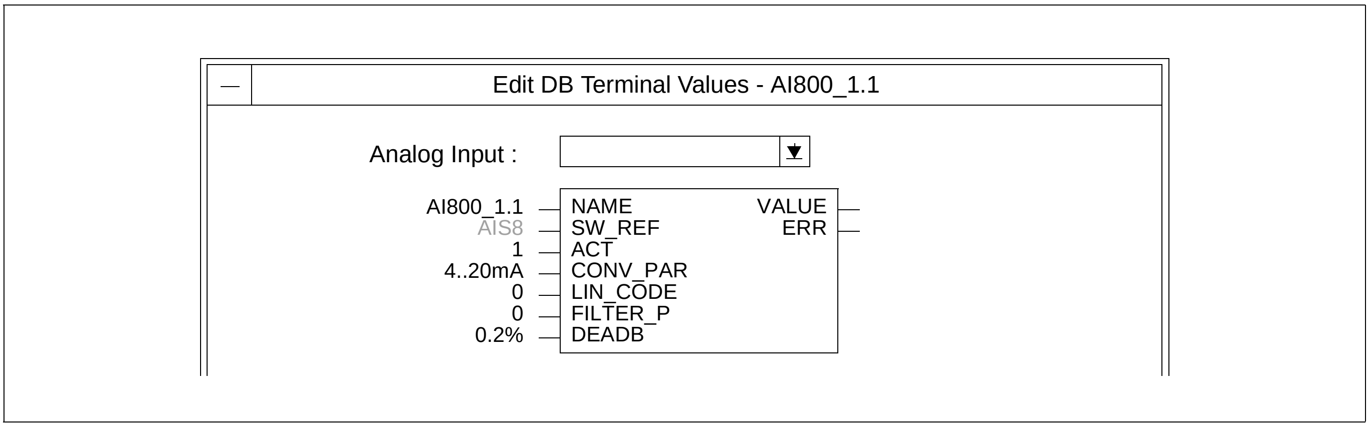
Terminal Description, Limit check (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
LO_LIM2	user	–5.0	–	**LO**w **LIM**it no. **2** (in percent).	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**.	–
HYST	user	1.0	–	**HYST**eresis for limit check.	–

Analog Input AIS810, AIS820

Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI810 or AI820 hardware module.



Edit DB Terminal Values - AI800_1.1

Analog Input :

AI800_1.1	NAME	VALUE
AIS8	SW_REF	ERR
1	ACT	
4..20mA	CONV_PAR	
0	LIN_CODE	
0	FILTER_P	
0.2%	DEADB	

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AI800_ x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Channel is: 0=spare 1=**ACT**ive	–
CONV_PAR	user	0..20mA	–	**CONV**ersion **PAR**ameter.	Value inherited from module element. See table “Conversion Parameter”.
LIN_CODE	user	0	–	**LIN**earization **CODE**. Values: 0=no linearization 1=square root	–
FILTER_P	user	0	–	**FILTER P**arameter. Values: 0=no filtering 0ms..9500ms or 10s..65s	–

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DEADB	user	0.2%	–	**DEADB**and. Values: –1=update every time 0%, 0.004%, 0.01%, 0.02%, 0.05%, 0.1%, 0.2%, 0.4%, 0.9%, 1.8%, 3.6%	–
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

Conversion Parameter

AI810

Voltage	0..10V	0..10V,LL	2..10V	2..10V,LL
Current	0..20mA	4..20mA,LL	4..20mA	4..20mA,LL

AI820

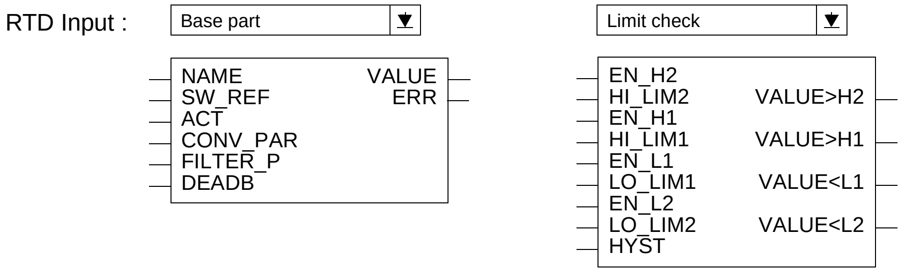
Voltage	–10..10V	0..10V	0..10V,LL	2..10V	2..10V,LL	–5..5V	0..5V	0..5V,LL	1..5V	1..5V,LL
Current	–20..20mA	0..20mA	0..20mA,LL	4..20mA	4..20mA,LL					

RTD Input AIS830

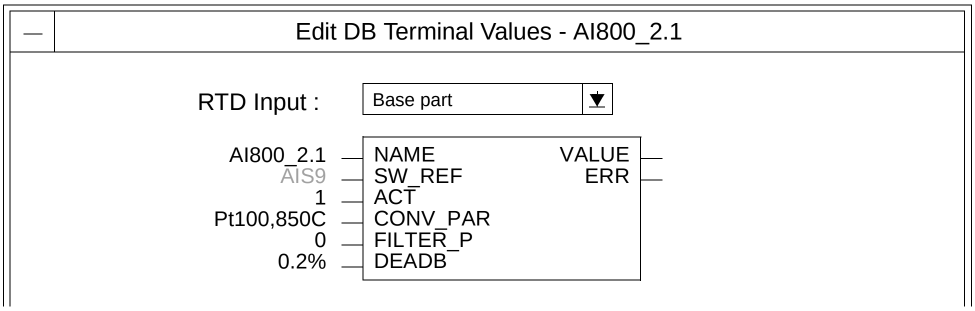
Summary

The data base element RTD Input is subordinate to the RTD module data base element specifying an AI830 hardware module.

Overview



Base part


Edit DB Terminal Values - AI800_2.1

RTD Input : Base part

AI800_2.1 — NAME
AIS9 — SW_REF
1 — ACT
Pt100,850C — CONV_PAR
0 — FILTER_P
0.2% — DEADB

VALUE
ERR

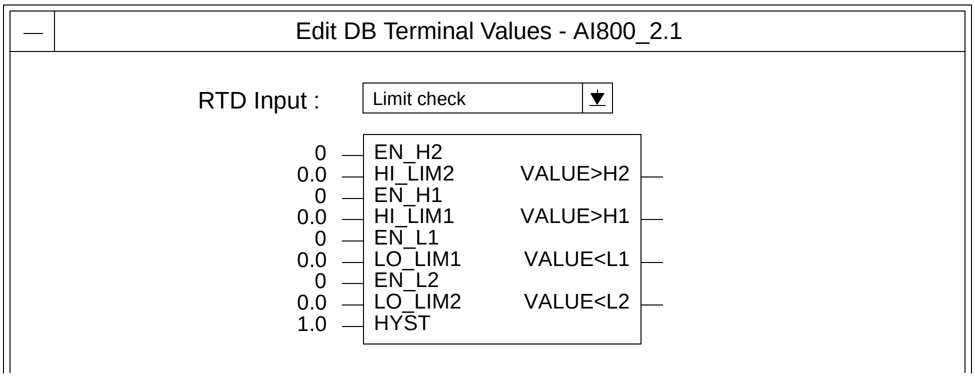
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AI800_ x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Channel is: 0=spare 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CONV_PAR	user	–	–	**CONV**ersion **PAR**ameter. Values: See the table “Conversion Parameters” in the description of the module element.	Value inherited from module element.
FILTER_P	user	0	–	**FILTER P**arameter. Values: 0=no filtering 0ms to 9500ms, 10s to 95s, 100s to 650s	–
DEADB	user	0.2%	–	**DEADB**and. Values: –1=update every time 0%, 0.003%, 0.01%, 0.02%, 0.05%, 0.09%, 0.2%, 0.4%, 0.08%, 1.6%, 3.2%	–
VALUE	system	–	R(r)	Signal **VALUE** in °C, °F, or Ω depending on conversion parameter.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

Limit check



Edit DB Terminal Values - AI800_2.1

RTD Input : Limit check

0 — EN_H2
0.0 — HI_LIM2 VALUE>H2 —
0 — EN_H1
0.0 — HI_LIM1 VALUE>H1 —
0 — EN_L1
0.0 — LO_LIM1 VALUE<L1 —
0 — EN_L2
0.0 — LO_LIM2 VALUE<L2 —
1.0 — HYST

Terminal Description, Limit check

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
EN_H2	user	0	–	1=**EN**ables **H**igh limit no **2**	–

Terminal Description, Limit check (Continued)

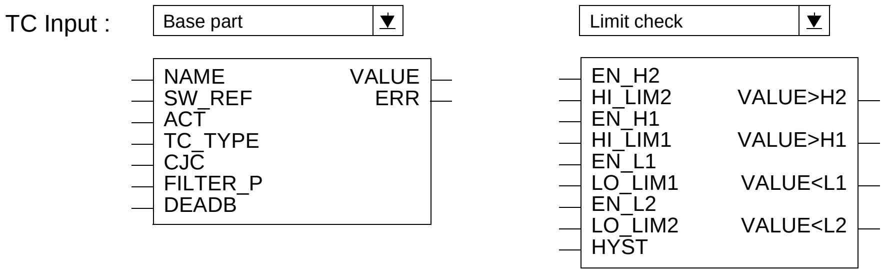
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HI_LIM2	user	0.0	–	**HI**gh **LIM**it no. **2** in °C, °F, or Ω depending on conversion parameter.	Accepted value HI_LIM2≥HI_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
EN_H1	user	0	–	1=**EN**ables **H**igh limit no **1**	–
HI_LIM1	user	0.0	–	**HI**gh **LIM**it no. **1** in °C, °F, or Ω depending on conversion parameter.	Accepted value HI_LIM1≥LO_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
EN_L1	user	0	–	1=**EN**ables **L**ow limit no **1**	–
LO_LIM1	user	0.0	–	**LO**w **LIM**it no. **1** in °C, °F, or Ω depending on conversion parameter.	Accepted value HI_LIM1≥LO_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
EN_L2	user	0	–	1=**EN**ables **L**ow limit no **2**	–
LO_LIM2	user	0.0	–	**LO**w **LIM**it no. **2** in °C, °F, or Ω depending on conversion parameter.	Accepted value LO_LIM1≥LO_LIM2. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
HYST	user	1.0	–	**HYST**eresis for limit check.	–
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**.	–

TC Input AIS835

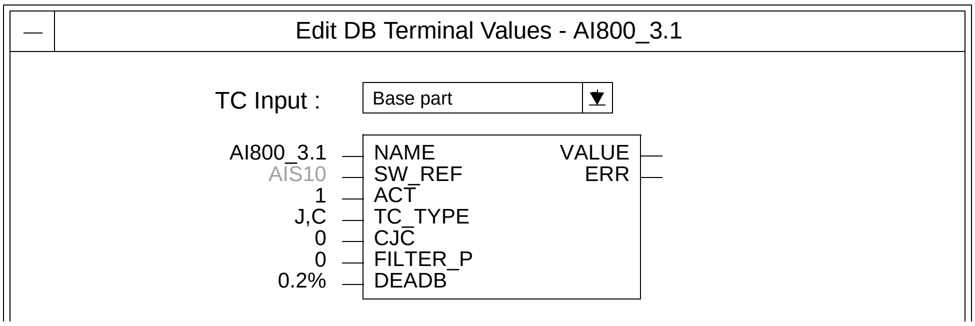
Summary

The data base element TC Input is subordinate to the TC module data base element specifying an AI835 hardware module.

Overview



Base part


Edit DB Terminal Values - AI800_3.1

TC Input : Base part

AI800_3.1 — NAME
AIS10 — SW_REF
1 — ACT
J,C — TC_TYPE
0 — CJC
0 — FILTER_P
0.2% — DEADB

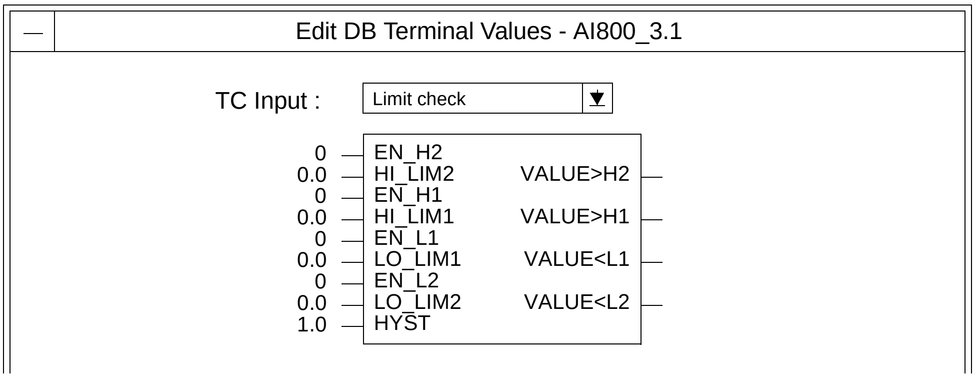
Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	AI800_ x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	1	–	Channel is: 0=spare 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
TC_TYPE	user	J,C	–	**T**hermo**C**ouple **TYPE**. Values: See the table “TC-Types” in the description of the module element.	Both for Celsius and Fahrenheit. Value inherited from module element.
CJC	user	0	–	**C**old **J**unction **C**ompensation. Values: 0=Cold Junction Compensation 1=Fixed Junction Compensation	–
FILTER_P	user	0	–	**FILTER P**arameter. Values: 0=no filtering 0ms to 9500ms, 10s to 95s, 100s to 650s	–
DEADB	user	0.2%	–	**DEADB**and. Values: –1=update every time 0%, 0.003%, 0.01%, 0.02%, 0.05%, 0.09%, 0.2%, 0.4%, 0.8%, 1.6%, 3.2%	–
VALUE	system	–	R(r)	Signal **VALUE** in °C, °F, or mV depending on conversion parameter.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

Limit check



Edit DB Terminal Values - AI800_3.1

TC Input : Limit check

0 — EN_H2
0.0 — HI_LIM2 VALUE>H2 —
0 — EN_H1
0.0 — HI_LIM1 VALUE>H1 —
0 — EN_L1
0.0 — LO_LIM1 VALUE<L1 —
0 — EN_L2
0.0 — LO_LIM2 VALUE<L2 —
1.0 — HYST

Terminal Description, Limit check

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EN_H2	user	0	–	1=**EN**ables **H**igh limit no **2**	–

Terminal Description, Limit check (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HI_LIM2	user	0.0	–	**HI**gh **LIM**it no. **2** in °C, °F, or mV depending on conversion parameter.	Accepted value HI_LIM2≥HI_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
EN_H1	user	0	–	1=**EN**ables **H**igh limit no **1**	–
HI_LIM1	user	0.0	–	**HI**gh **LIM**it no. **1** in °C, °F, or mV depending on conversion parameter.	Accepted value HI_LIM1L≥O_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
EN_L1	user	0	–	1=**EN**ables **L**ow limit no **1**	–
LO_LIM1	user	0.0	–	**LO**w **LIM**it no. **1** in °C, °F, or mV depending on conversion parameter.	Accepted value HI_LIM1≥LO_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
EN_L2	user	0	–	1=**EN**ables **L**ow limit no **2**	–
LO_LIM2	user	0.0	–	**LO**w **LIM**it no. **2** in °C, °F, or mV depending on conversion parameter.	Accepted value LO_LIM1≥LO_LIM2. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2 required if at least one value is not zero. Moreover the difference of two neighboring limits must be greater hysteresis.
HYST	user	1.0	–	**HYST**eresis for limit check.	–
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**.	–

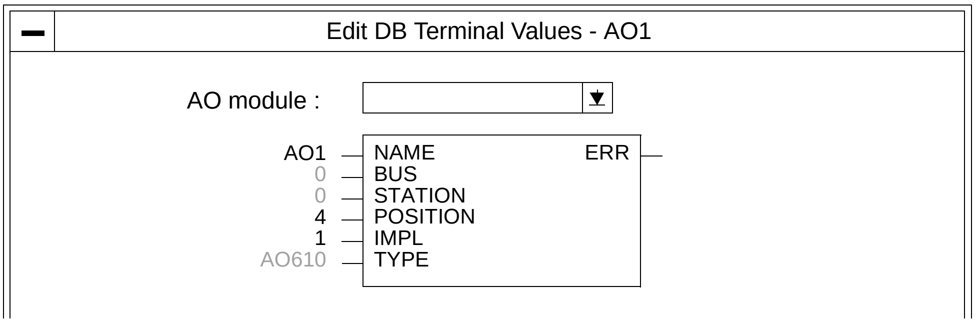
AO module AO610

Summary

AO610 is a module for handling of analog output signals.

The Engineering Station will create:

- 1 data base element of type AO module.
- 16 data base elements of type Analog Output.



Edit DB Terminal Values - AO1

AO module :

AO1 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
AO610 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AO610	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

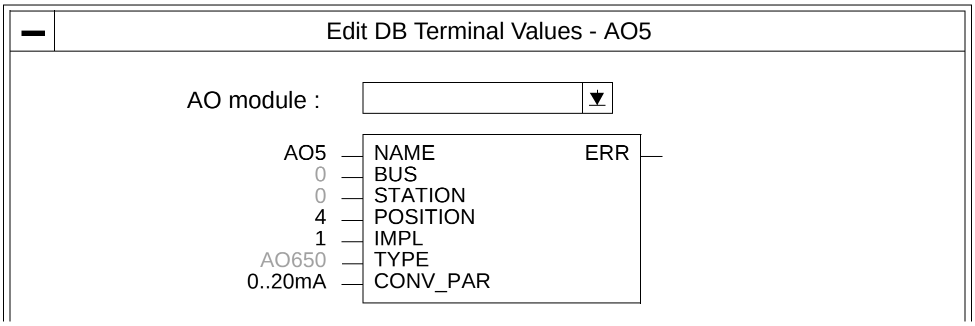
AO module AO650

Summary

AO650 is a module for handling of analog output signals.

The Engineering Station will create:

- 1 data base element of type AO module.
- 8 data base elements of type Analog Output.



Edit DB Terminal Values - AO5

AO module :

AO5 — NAME ERR —
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
AO650 — TYPE
0..20mA — CONV_PAR

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module within its station.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AO650	–	Module **TYPE**.	See call name.
CONV_PAR	user	0..20mA	–	The normal signal range can be entered as **CONV**ersion **PAR**ameter. Values: 0..20mA, 4..20mA, –20..20mA, –10..10V, 0..5V, 1..5V, 0..10V	–

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

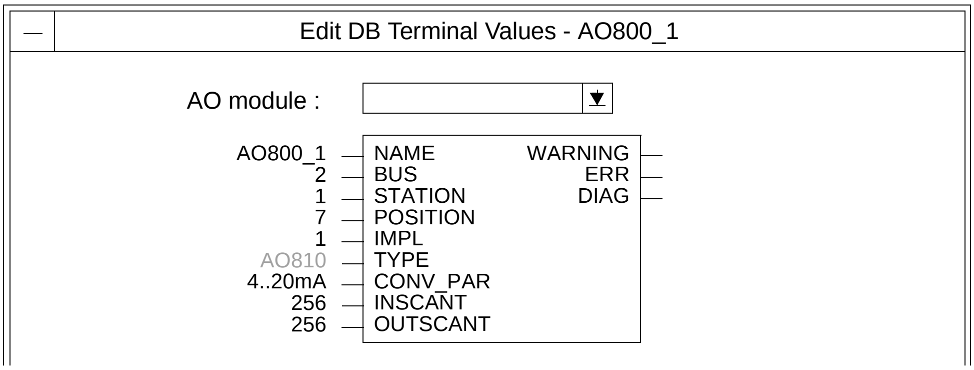
AO module AO810, AO820

Summary

The AO module data base element specifies an Analog Output hardware module of type AO810 or AO820 contained in an Advant Fieldbus 100 I/O station. The data base element is superior to the signal elements associated to the analog output channels in the module and contains diagnostic information of the I/O module.

The Engineering Station will create:

- 1 data base element of type AO module
- 8 (AO810) or 4 (AO820) data base elements of type Analog Output.



Edit DB Terminal Values - AO800_1

AO module :

AO800_1 — NAME
2 — BUS
1 — STATION
7 — POSITION
1 — IMPL
AO810 — TYPE
4..20mA — CONV_PAR
256 — INSCANT
256 — OUTSCANT

WARNING —
ERR —
DIAG —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AO800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AO810/ AO820	–	Module **TYPE** designation.	See call name.
CONV_PAR	user	4..20mA	–	**CONV**ersion **PAR**ameter. Default value for the I/O signal elements: 0..20mA, 4..20mA	Modification denied after creation.

Terminal Description (Continued)

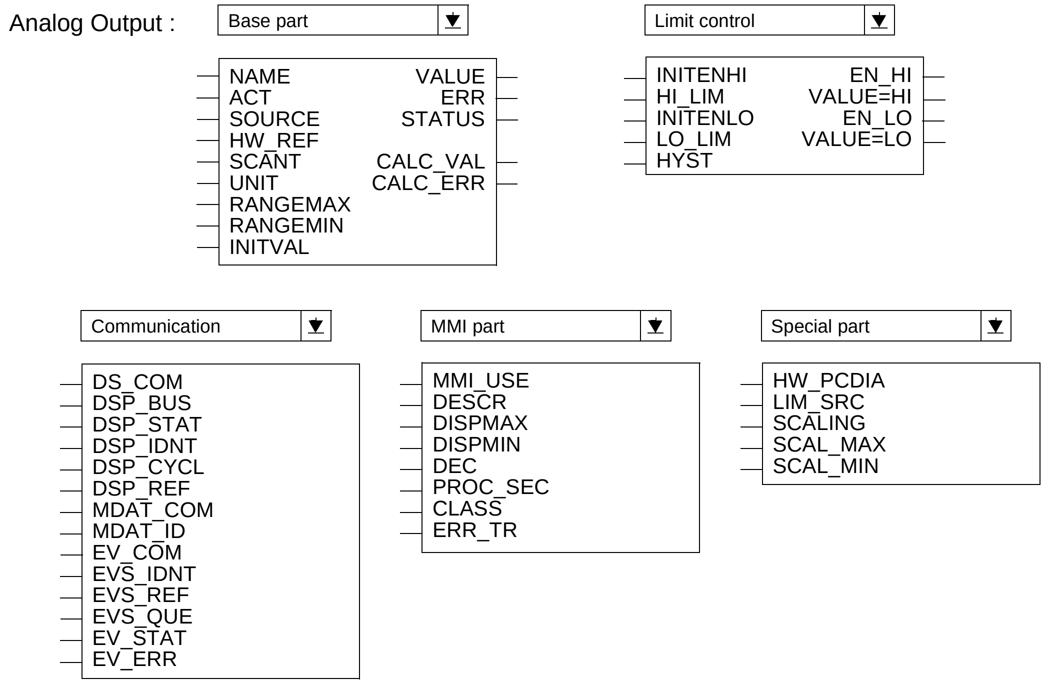
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
INSCANT	user	256	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
OUTSCANT	user	256	–	**SCAN**ner cycle time on AF 100 for **OUT**going values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Analog Output **AOS**

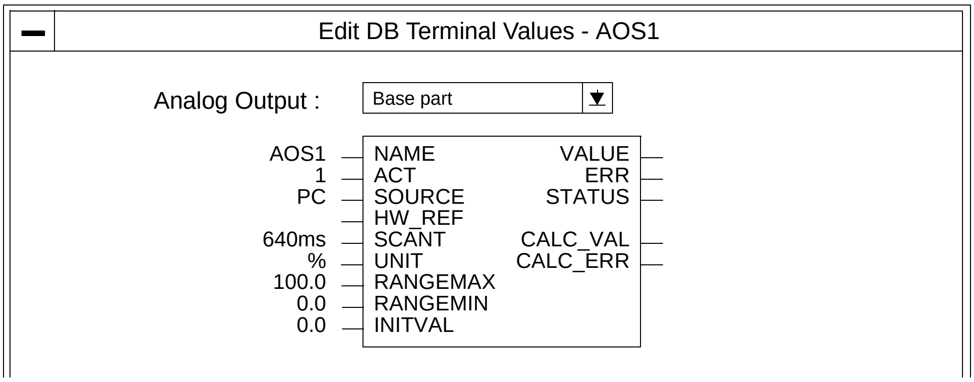
Summary

This Analog Output data base element represents an extended AO object.

Overview



Base part

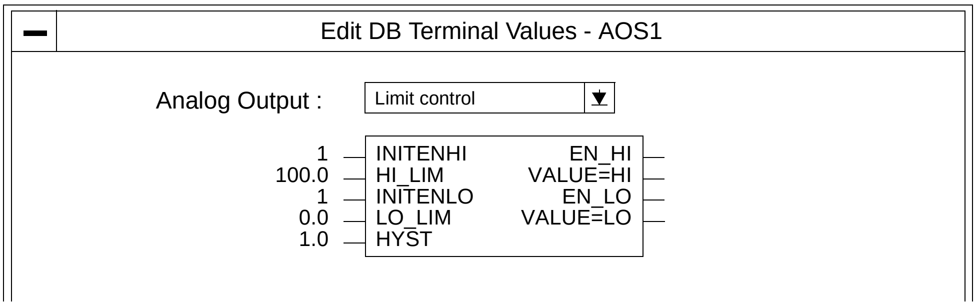


AOS1 — NAME
1 — ACT
PC — SOURCE
— HW_REF
640ms — SCANT
% — UNIT
100.0 — RANGEMAX
0.0 — RANGEMIN
0.0 — INITVAL

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AISx	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: HW, PC, RECEIVE, MMI.	HW: Value is fetched from a analog output signal element, terminal HW_REF points to the element. PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
HW_REF	user	*	–	**REF**erence to the **H**ard**W**are.	Used if SOURCE = HW.
SCANT	user	640ms	–	**SCAN T**ime for event recording. Values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
UNIT	user	%	–	The signal **UNIT** in engineering units.	Max. 6 characters.
RANGEMAX	user	100.0	–	**RANGE MAX**imum input in engineering units (for example 100 kg) for maximum input signal (for example 20 mA).	–
RANGEMIN	user	0.0	–	**RANGE MIN**imum input in engineering units (for example 0 kg) for minimum input signal (for example 4 mA).	–
INITVAL	user	0.0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	R(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
STATUS	system	–	IL(r)	**STATUS** information.	Status bits described in chapter introduction.
CALC_VAL	system	–	R(r/w)	**CALC**ulated **VAL**ue.	To be provided by PC program if SOURCE = PC.
CALC_ERR	system	–	B(r/w)	**CALC**ulated software **ERR**or.	To be provided by PC program if SOURCE = PC.

Limit check



Edit DB Terminal Values - AOS1

Analog Output : Limit control

```
    1 —— INITENHI        EN_HI ——
100.0 —— HI_LIM       VALUE=HI ——
    1 —— INITENLO        EN_LO ——
  0.0 —— LO_LIM       VALUE=LO ——
  1.0 —— HYST
```

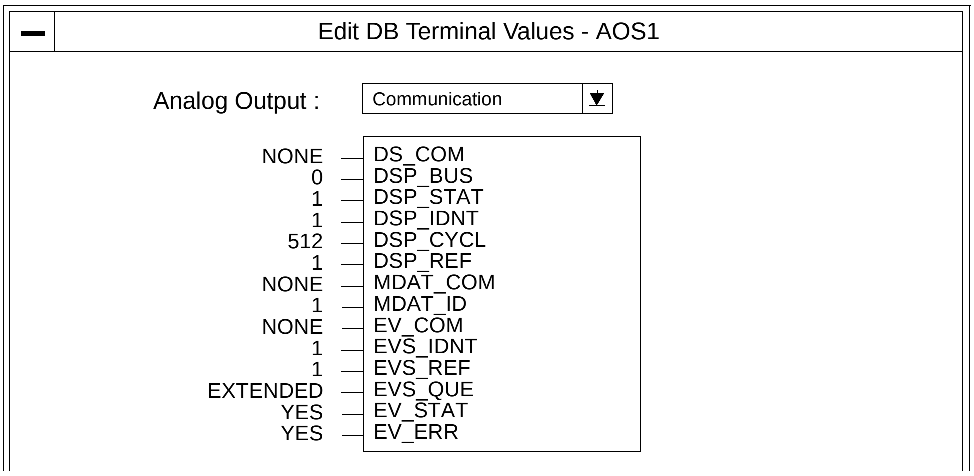
Terminal Description, Limit check

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
INITENHI	user	1	–	**INIT**ial value for **EN_HI**. 0=disable 1=enable	–
HI_LIM	user	100.0	–	**HI**gh **LIM**it	SCALING=CONTROLLER: engineering units. SCALING=MMI: handled by Operator Station. SCALING=NONE: depending on hardware type used, for example, AI610.
INITENLO	user	1	–	**INIT**ial value for **EN_LO**. 0=disable 1=enable	–
LO_LIM	user	0.0	–	**LO**w **LIM**it.	SCALING=CONTROLLER: engineering units. SCALING=MMI: handled by Operator Station. SCALING=NONE: depending on hardware type used, for example, AI610.
HYST	user	1.0	–	**HYST**eresis for limit check.	≥0.0
EN_HI	system/ PC	–	B(r/w)	Limit check for **HI**gh limit is 1=**EN**abled	–
VALUE=HI	system		B(r)	Flag indicating that **VALUE** has been limited to **HI**gh limit.	–

Terminal Description, Limit check (Continued)

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
EN_LO	system/ PC	–	B(r/w)	Limit check for **LO**w limit is 1=**EN**abled 0=disabled	–
VALUE=LO	system	–	B(r)	Flag indicating that **VALUE** has been limited to **LO**w limit.	–

Communication



Edit DB Terminal Values - AOS1

Analog Output : Communication

NONE — DS_COM
0 — DSP_BUS
1 — DSP_STAT
1 — DSP_IDNT
512 — DSP_CYCL
1 — DSP_REF
NONE — MDAT_COM
1 — MDAT_ID
NONE — EV_COM
1 — EVS_IDNT
1 — EVS_REF
EXTENDED — EVS_QUE
YES — EV_STAT
YES — EV_ERR

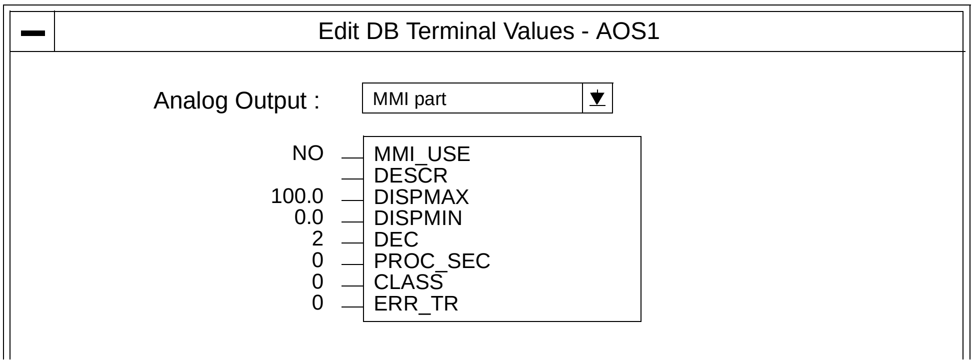
Terminal Description, Communication

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50

Terminal Description, Communication (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of the first of two **DAT** element within the DSP element.	Range 1–7
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.
MDAT_ID	user	1	–	**ID**ent of the first of two **MDAT** elements.	Range 1–199
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32
EVS_QUE	user	EXTENDED	–	Specifies the event **QUE**ue size of the **EV**ent **S**et element. Values: NORMAL (100 entries), EXTENDED (500 entries)	–
EV_STAT	user	YES	–	Generate **EV**ents for **STAT**us changes. Values: YES, NO.	Events are generated for Acknowledgement, alarm blocking and forcing.
EV_ERR	user	YES	–	Generate **EV**ents if an **ERR**or occurs. Values: YES, NO.	See chapter introduction for error conditions that generate events.

MMI part



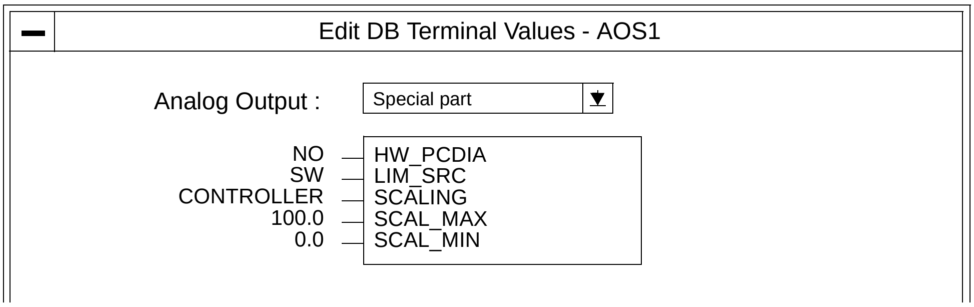
Analog Output : MMI part

NO — MMI_USE
— DESCR
100.0 — DISPMAX
0.0 — DISPMIN
2 — DEC
0 — PROC_SEC
0 — CLASS
0 — ERR_TR

Terminal Description, MMI part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–
DESCR	user		–	Signal **DESCR**iption.	–
DISPMAX	user	100.0	–	**MAX**imum value **DISP**layed on screen.	Derives scaling for screen.
DISPMIN	user	0.0	–	**MIN**imum value **DISP**layed on screen.	Derives scaling for screen.
DEC	user	2	–	Number of **DEC**imals to be presented by Operator Station.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1–16
CLASS	user	0	–	**CLASS** subdivides process section. Used by status list function in Operator Station.	Range -128–+127
ERR_TR	user	0	–	**ERR**or **TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling

Special part



Edit DB Terminal Values - AOS1

Analog Output : Special part

NO — HW_PCDIA
SW — LIM_SRC
CONTROLLER — SCALING
100.0 — SCAL_MAX
0.0 — SCAL_MIN

Terminal Description, Special part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HW_PCDIA	user	NO	–	**PC** element uses **DI**rect **A**ccess to the **H**ard**W**are. Values: NO, YES.	Used if SOURCE = HW. See chapter below.
LIM_SRC	user	SW	–	**S**ou**RC**e for **LIM**it check. Values: SW, NONE.	SW: Limit check is performed within the AOS element. NONE: No limit check.
SCALING	user	CONTROLLER	–	Defines if and where the **SCALING** to engineering units is done. Values: CONTROLLER, MMI, NONE.	CONTROLLER: Scaling is done in the controller. MMI: Scaling is done in the MMI. Controller uses units setup in the module. NONE: No scaling.
SCAL_MAX	user	100.0	–	**SCAL**ing **MAX**imum value.	If hardware does not scale to 0–100 %, these terminals have to set, see “Scaling of VALUE Terminal” below.
SCAL_MIN	user	0.0	–	**SCAL**ing **MIN**imum value.	

Scaling of VALUE Terminal

If HW_PCDIA = NO:

$\mathit{hardware\ value} = 1/\mathit{factor} \times \mathrm{VALUE} - \mathit{offset}/\mathit{factor}$

where *hardware value* = provided by HW module, *offset* = –factor × SCAL_MIN + RANGEMIN,

$\mathit{factor} = (\mathrm{RANGEMAX} - \mathrm{RANGEMIN})/(\mathrm{SCAL\_MAX} - \mathrm{SCAL\_MIN})$.

HW_PCDIA Terminal

Terminal HW_PCDIA specifies how the value is fetched from the hardware (if terminal SOURCE = HW).

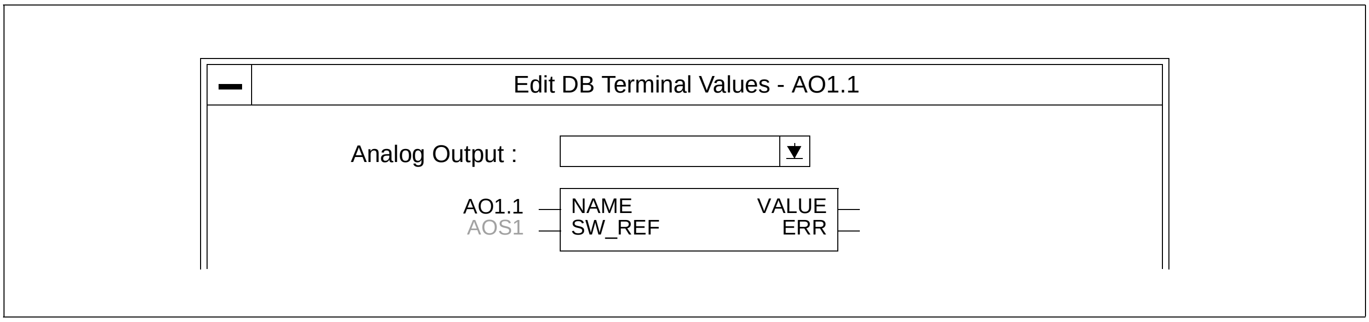
HW_PCDIA = YES:
Each consumer of the value (CONTRMs) fetches the value directly via the BIOB address from the hardware or from the PC element or from the data base element.

HW_PCDIA = NO:
The value is fetched from the AOS element and provided in terminal VALUE.

Analog Output AOS610

Summary

The data base element Analog Output is subordinate to the AO module data base element specifying an AO610 hardware module.



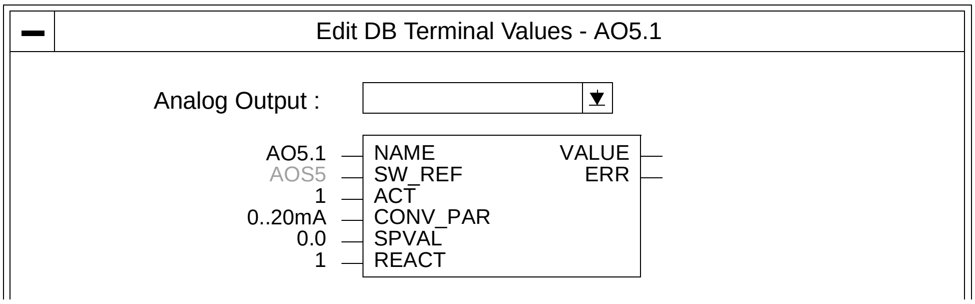
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	AOx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AOS data base element.	Automatically updated when referenced by an AOS element.
VALUE	system	–	R(r/w)	Process **VALUE** (in percent).	Range 0–100%
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Analog Output AOS650

Summary

The data base element Analog Output is subordinate to the AO module data base element specifying an AO650 hardware module.



Edit DB Terminal Values - AO5.1

Analog Output :

AO5.1 — NAME
AOS5 — SW_REF
1 — ACT
0..20mA — CONV_PAR
0.0 — SPVAL
1 — REACT

VALUE —
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AOS data base element.	Automatically updated when referenced by an AOS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
CONV_PAR	user	0..20mA	–	The normal signal range can be entered as **CONV**ersion **PAR**ameter. Values: 0..20mA, 4..20mA, –20..20mA, –10..10V, 0..5V, 1..5V, 0..10V	–
SPVAL	user	0.0	–	**S**et**P**oint **VAL**ue in percent of signal value in case of OSP or not operating module if REACT=1.	–
REACT	user	1	–	**REACT**ion parameter. 0=keep current output value 1=set output value to SPVAL	–
VALUE	system	–	R(r/w)	Process **VALUE** (in percent).	Range 0–100%, -100–100%

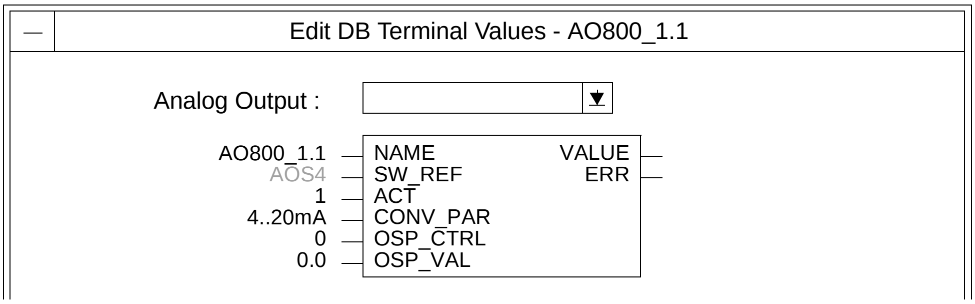
Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal out of range	–

Analog Output AOS810, AOS820

Summary

The data base element Analog Output is subordinate to the AO module data base element specifying an AO810 or AO820 hardware module.



Edit DB Terminal Values - AO800_1.1

Analog Output :

AO800_1.1 — NAME
AOS4 — SW_REF
1 — ACT
4..20mA — CONV_PAR
0 — OSP_CTRL
0.0 — OSP_VAL
VALUE —
ERR —

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	AO800_x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AOS data base element.	Automatically updated when referenced by an AOS element.
ACT	user	1	–	Channel is: 0=spare 1=**ACT**ive	–
CONV_PAR	user	4..20mA	–	**CONV**ersion **PAR**ameter. Values: 0..20mA, 4..20mA	Value inherited from module element.
OSP_CTRL	user	0	–	**O**utputs **S**et as **P**redetermined: 0=keep current value 1=set to OSP_VAL	–
OSP_VAL	user	0.0	–	**OSP VAL**ue to set if OSP_CTRL is set to 1.	–
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

AX module AX645

Summary

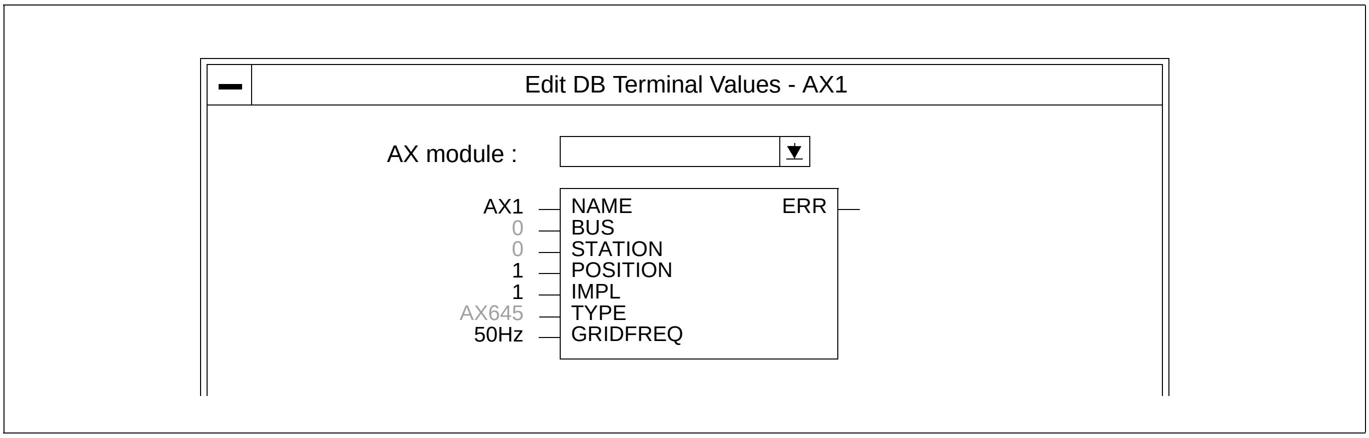
AX645 is a module for handling of fast analog input and output signals.

The Engineering Station will create:

- 1 data base element of type AX module.
- 16 data base elements of type Analog Input.
- 16 data base elements of type Analog Output.

Each signal can work as input or output signal. To have signal number c for a given AX module number m work as

- input:
  Set instance AXIm.c to an active state (ACT = 1) and AXOm.c to an inactive state (ACT = 0)
- output:
  Set instance AXIm.c to an inactive state (ACT = 0) and AXOm.c to an active state (ACT = 1).



Edit DB Terminal Values - AX1

AX module :

AX1 — NAME
0 — BUS
0 — STATION
1 — POSITION
1 — IMPL
AX645 — TYPE
50Hz — GRIDFREQ
ERR —

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	AXx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See section “Address terminals” in chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AX645	–	Module **TYPE**.	See call name.
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency suppression filter. Values: 50Hz, 60Hz.	Not allowed to change on-line.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module, or signal deviation at output.	–

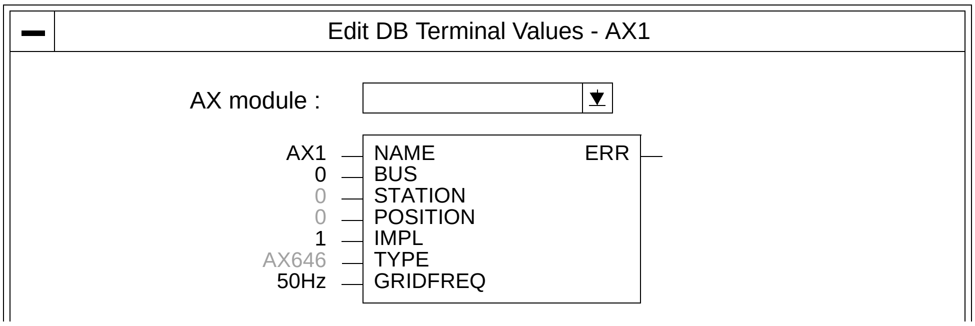
AX module AX646

Summary

AX646 is a combined I/O module to handle analog input signals and corresponding check back output signals especially for safety applications.

The Engineering Station will create:

- 1 data base element of type AX module (AX646).
- 16 data base elements of type Analog Input (AXIS646).
- 16 data base elements of type Analog Output (AXOS646).
- 1 data base element of type Digital Output (AXDOS646).



Edit DB Terminal Values - AX1

AX module :

AX1 — NAME ERR —
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
AX646 — TYPE
50Hz — GRIDFREQ

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AXx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	AX646	–	Module **TYPE**.	See call name.
GRIDFREQ	user	50Hz	–	**GRIDFREQ**uency suppression filter. Values: 50Hz, 60Hz.	Not allowed to change on-line.

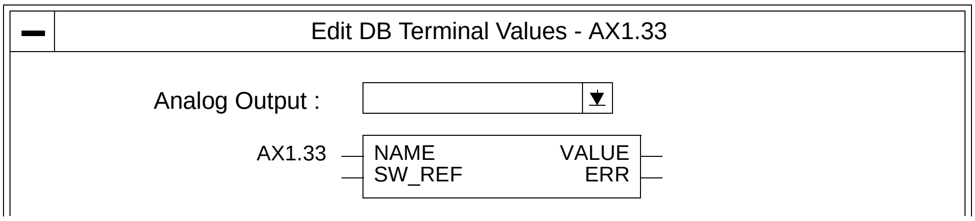
Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module, or signal deviation at output.	–

Digital Output AXDOS646

Summary

AXDOS646 is subordinate to AX646. This digital output switches the AX646 into test mode.



Edit DB Terminal Values - AX1.33

Analog Output :

Terminal Description

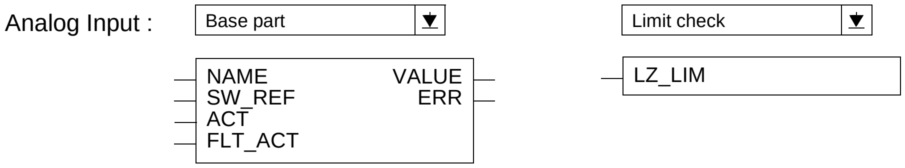
Terminal Name	Value entered by	Default Value	PC connection data type	Description	Remarks
NAME	user	AXx.y	–	Unique signal **NAME**.	Max. 20 characters
SW_REF	system	*	B(r)	Backward **REF**erence to a DOS data base element.	Automatically updated when referenced by a DOS element
VALUE	system	–	B(r/w)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or Flag 0= no error 1= non functional module	–

Analog Input AXIS645

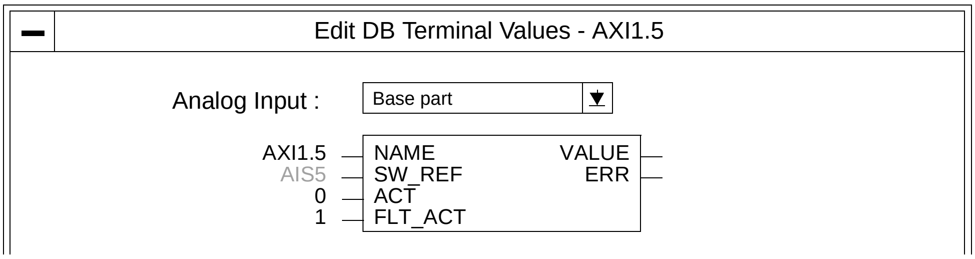
Summary

AXIS645 is subordinated to AX645.

Overview



Base part



Edit DB Terminal Values - AXI1.5

Analog Input : Base part

AXI1.5
AIS5
0
1

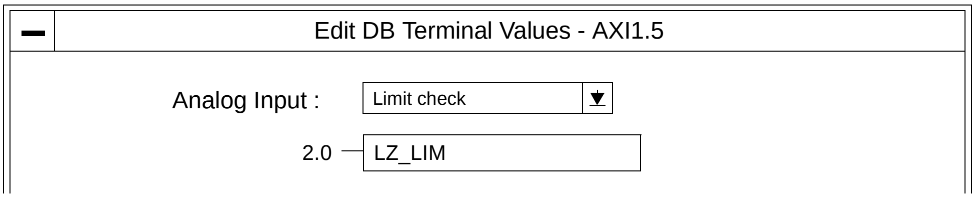
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AXIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Automatically updated when referenced by an AIS element.
ACT	user	0	–	Signal is: 0=spare 1=**ACT**ive	For each signal number either this element or the output element can be set to ACT = 1.
FLT_ACT	user	1	–	Grid **F**i**LT**er is: 1=**ACT**ive 0=not active	–
VALUE	system	–	R(r)	Process **VALUE (**in percent).	Range 0–100

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, live-zero or overrange at input.	–

Limit check



Analog Input : Limit check

2.0 LZ_LIM

Terminal Description, Limit check

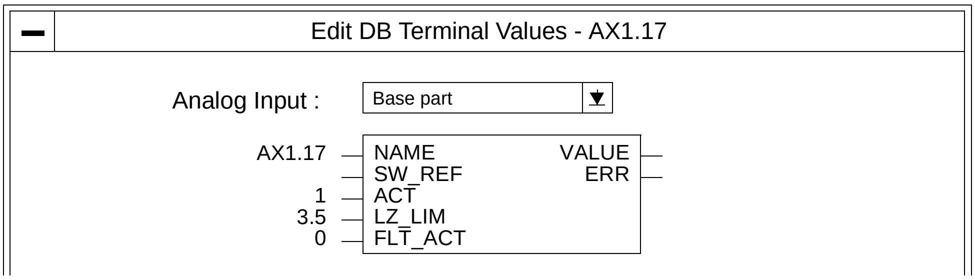
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
LZ_LIM	user	2.0	–	**L**ive-**Z**ero **LIM**it in mA for live-zero supervision.	Range 0.0–4.0

Analog Input

AXIS646

Summary

AXIS646 is subordinate to AX646.



Edit DB Terminal Values - AX1.17

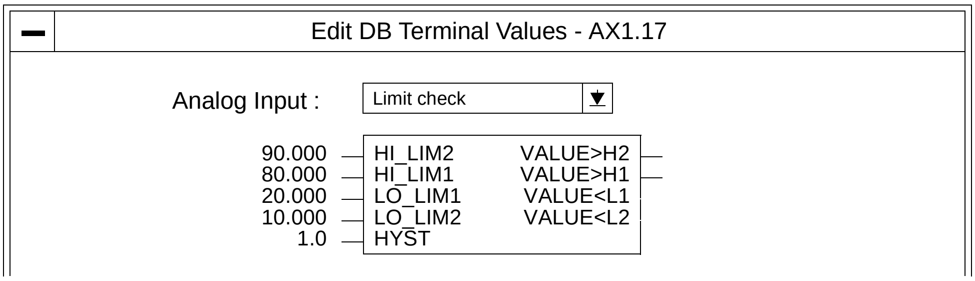
Analog Input : Base part

AX1.17 — NAME
SW_REF
1 — ACT
3.5 — LZ_LIM
0 — FLT_ACT

VALUE
ERR

Terminal Description

Terminal Name	Value entered by	Default Value	PC connection data type	Description	Remarks
NAME	user	AXx.y	–	Unique signal **NAME**.	Max. 20 characters y = 1, 2, …, 16
SW_REF	system	*	–	Backward **REF**erence to a DIS data base element.	Automatically updated when referenced by a AIS element
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
LZ_LIM	user	3.5	–	**L**ive **Z**ero **LIM**it in mA for live-zero supervision.	Range 0.0–4.0
FLT_ACT	user	0	–	Grid **FiLT**er is: 1 = **ACT**ive 0 = not active	–
VALUE	system	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or Flag 0= no error 1= non functional module	–



Edit DB Terminal Values - AX1.17

Analog Input : Limit check

Terminal Description

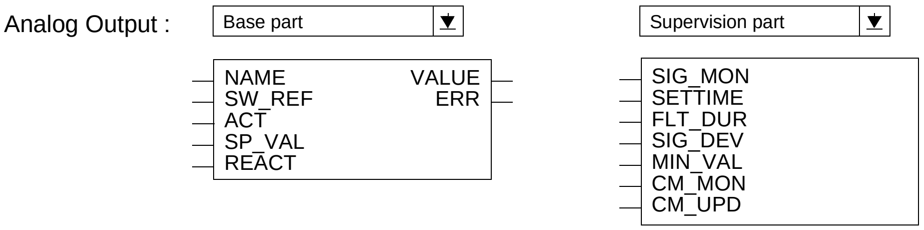
Terminal Name	**Value entered by**	**Default Value**	**PC connection data type**	**Description**	**Remarks**
HI_LIM2	user	90.0	–	**HI**gh **LIM**it no. **2** (in percent).	–
HI_LIM1	user	80.0	–	**HI**gh **LIM**it no. **1** (in percent).	–
LO_LIM1	user	20.0	–	**LO**w **LIM**it no. **1** (in percent).	–
LO_LIM2	user	10.0	–	**LO**w **LIM**it no. **2** (in percent).	–
HYST	user	1.0	–	**HYST**eresis for limit check.	–
VALUE>H2	user	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
VALUE>H1	user	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
VALUE<L1	user	–	B(r)	1=**VALUE** has exceeded **L**ow **L**imit no. **1**.	–
VALUE<L2	user	–	B(r)	1=**VALUE** has exceeded **L**ow **L**imit no. **2**.	–

Analog Output AXOS645

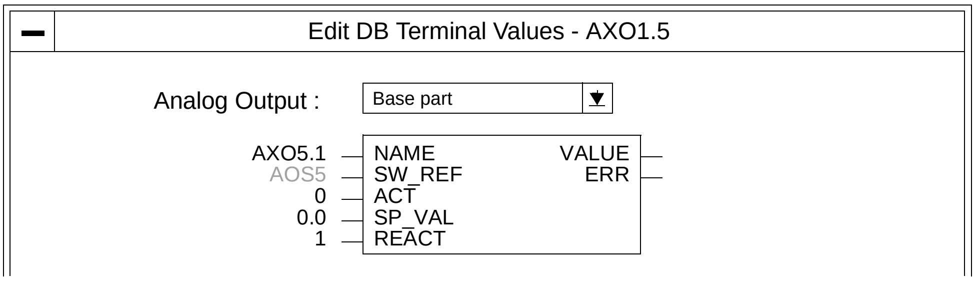
Summary

AXOS645 is subordinated to AX645.

Overview



Base part


Edit DB Terminal Values - AXO1.5

Analog Output : Base part

AXO5.1 — NAME
AOS5 — SW_REF
0 — ACT
0.0 — SP_VAL
1 — REACT
VALUE —
ERR —

Terminal Description, Base part

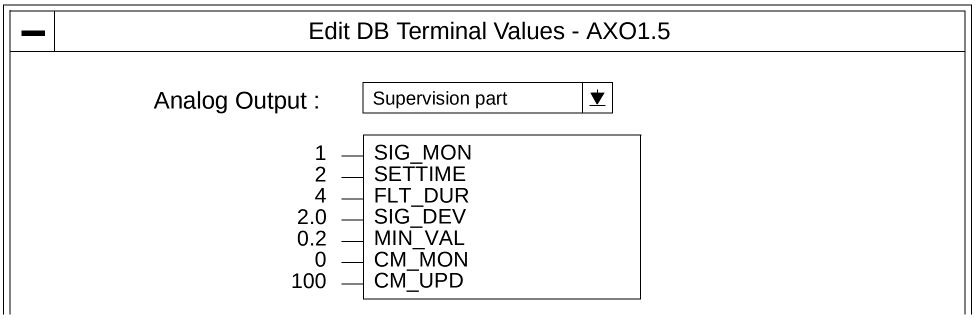
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AXOx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AOS data base element.	Automatically updated when referenced by an AOS element.
ACT	user	0	–	Signal is: 0=spare 1=**ACT**ive	For each signal number either this element or the input element can be set to ACT = 1.
SP_VAL	user	0.0	–	**S**et**P**oint **VAL**ue in percent of signal value in case of OSP or not operating module if REACT=1.	Range -25.0–100.0 % equiv. 0–20 mA.

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
REACT	user	1	–	**REACT**ion parameter. 0=keep current output value 1=set output value to SP_VAL	–
VALUE	system	–	R(r/w)(1)	Process **VALUE** (in percent).	Range 0–100% equiv. to 4–20 mA, 25–118.75 % equiv. to 0–23 mA.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or signal deviation at output.	–

(1) Although the PC connection type is r/w, the value cannot be read.

Supervision part



Edit DB Terminal Values - AXO1.5

Analog Output : Supervision part

1 — SIG_MON
2 — SETTIME
4 — FLT_DUR
2.0 — SIG_DEV
0.2 — MIN_VAL
0 — CM_MON
100 — CM_UPD

Terminal Description, Supervision part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
SIG_MON	user	1	–	**SIG**nal **MON**itor. 0=inactive 1=active	–
SETTIME	user	2	–	**SET TIME** in milliseconds. Time period before monitor starts to check the output signal.	Range 0–100
FLT_DUR	user	4	–	**F**au**LT DUR**ation in milliseconds. A signal deviation must last min. FLT_DUR to trigger the monitor.	Range 0–100
SIG_DEV	user	2.0	–	**SIG**nal **DEV**iation in percent. 1–10 % of nominal range is the permissible signal deviation.	Range 1.0–10.0

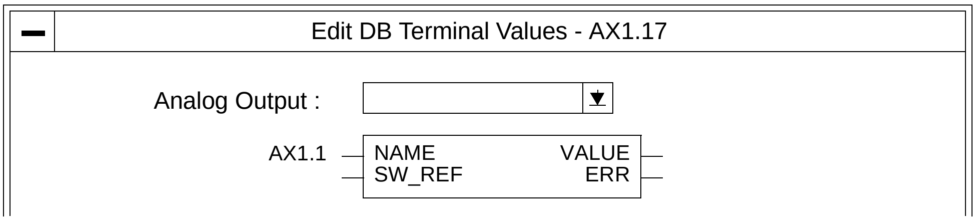
Terminal Description, Supervision part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
MIN_VAL	user	0.2	–	**MIN**imal **VAL**ue in volts at output. A lower voltage will trigger the monitor.	Range 0.0–10.0
CM_MON	user	0	–	**C**ommunication **M**emory.	–
CM_UPD	user	100	–	**C**ommunication **M**emory **UPD**ate in milliseconds. If the communication memory is not updated within this time, SP_VAL is put out.	Range 1–1000

Analog Output AXOS646

Summary

AXOS646 is subordinate to AX646.



Edit DB Terminal Values - AX1.17

Analog Output :

Terminal Description

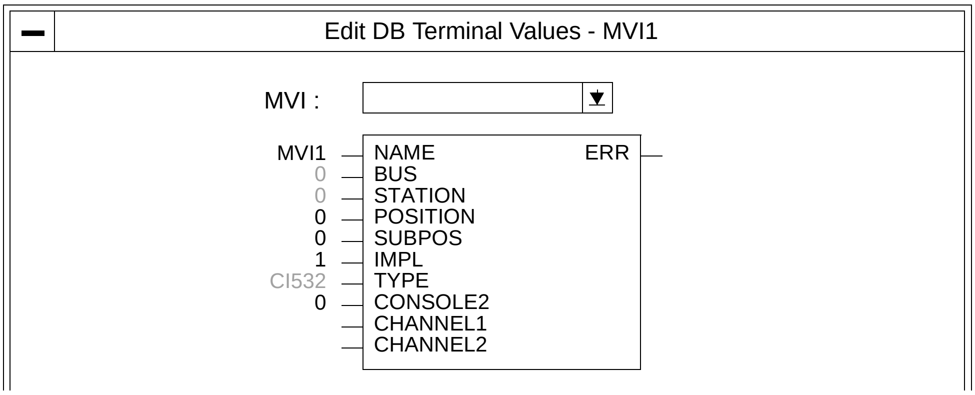
Terminal Name	Value entered by	Default Value	PC connection data type	Description	Remarks
NAME	user	AXx.y	–	Unique signal **NAME**.	Max. 20 characters y = 17, 18,…, 32
SW_REF	system	*	B(r)	Backward **REF**erence to a AOS data base element.	Automatically updated when referenced by a AOS element
VALUE	system	–	B(r/w)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or Flag 0= no error 1= non functional module	–

MVI CI532

Summary

The CI532 module is used for transmission of process data and event data via telecommunication line. Different communication protocols are supported. The version CI532V01 support the protocols RCOM and RCOM+.

Each MVI module has two communication channels configured which can be configured using the data base element type MVI Channel.



Edit DB Terminal Values - MVI1

MVI :

MVI1 — NAME ERR —
0 — BUS
0 — STATION
0 — POSITION
0 — SUBPOS
1 — IMPL
CI532 — TYPE
0 — CONSOLE2
— CHANNEL1
— CHANNEL2

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	MVIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
SUBPOS	user	0	–	**SUB**module **POS**ition.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI532	–	Module **TYPE**.	–
CONSOLE2	user	0	–	**CONSOLE** function for MVI channel 2. 0=console function disabled (used for test and fault tracing purposes) 1=console function enabled	–

Terminal Description (Continued)

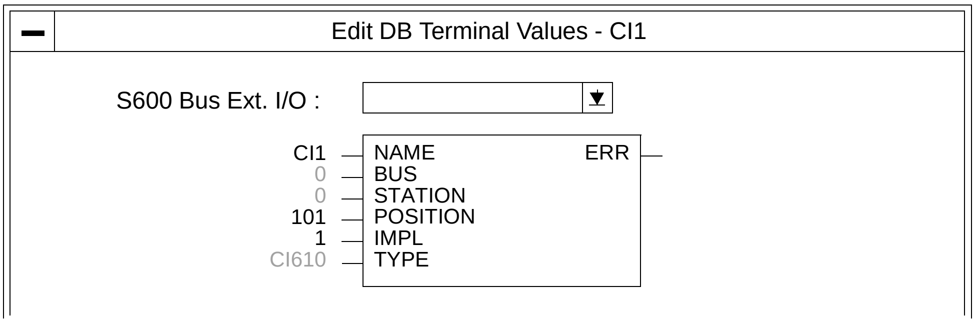
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CHANNEL1	user	*	–	Name of data base element MVICHAN defining MVI **CHANNEL 1**.	–
CHANNEL2	user	*	–	Name of data base element MVICHAN defining MVI **CHANNEL 2**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

S600 Bus Ext. I/O CI610

Summary

The CI610 is a bus extender module for I/O stations. The base station has to be connected via the CI615 module.

Two CI610 and two CI615 bus extender modules have to be created to achieve a redundant connection between base station and I/O station.


Edit DB Terminal Values - CI1

S600 Bus Ext. I/O :

CI1 — NAME
0 — BUS
0 — STATION
101 — POSITION
1 — IMPL
CI610 — TYPE
ERR —

Terminal Description

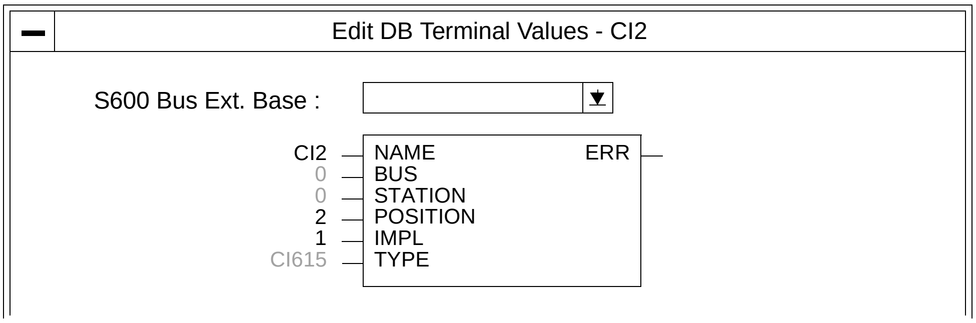
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	CIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	101	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI610	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

S600 Bus Ext. Base CI615

Summary

The CI615 is a bus extender module for the base station. The I/O stations have to be connected via the CI615 module.

Two CI610 and two CI615 bus extender modules have to be created to achieve a redundant connection between base station and I/O station.



Edit DB Terminal Values - CI2

S600 Bus Ext. Base :

CI2 — NAME
0 — BUS
0 — STATION
2 — POSITION
1 — IMPL
CI615 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	CIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	2	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI615	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

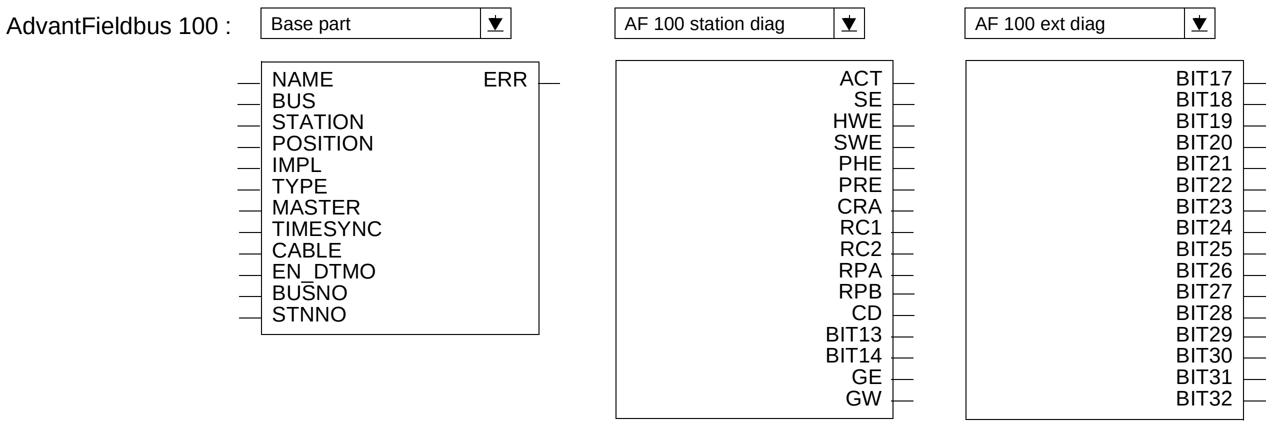
AdvantFieldbus 100 CI626, CI627

Summary

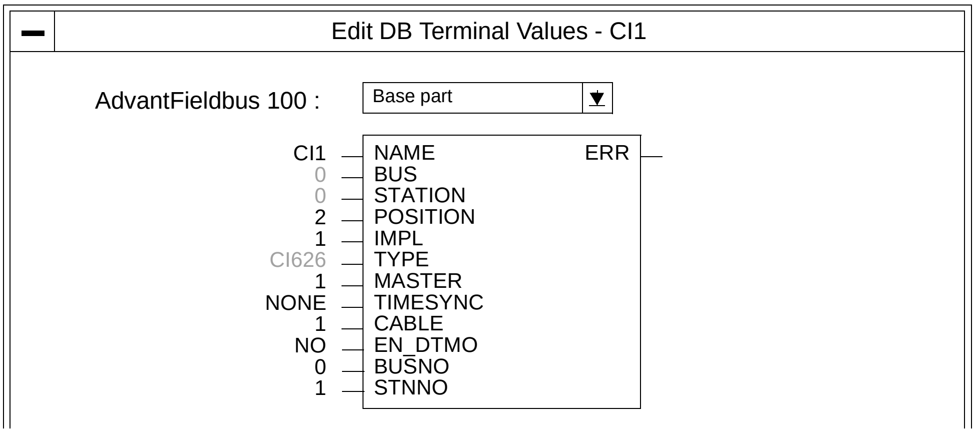
CI626 is a bus coupler to Advant Fieldbus 100 that uses coaxial line, whereas CI627 uses twisted pair line. The data base element shows diagnostic information of the coupler as well as status information of the Advant Controller 160 station in general. See Section Advant Controller 160 Station Status in Chapter Introduction for detailed information.

Up to two AdvantFieldbus 100 elements can be created.

Overview



Base part

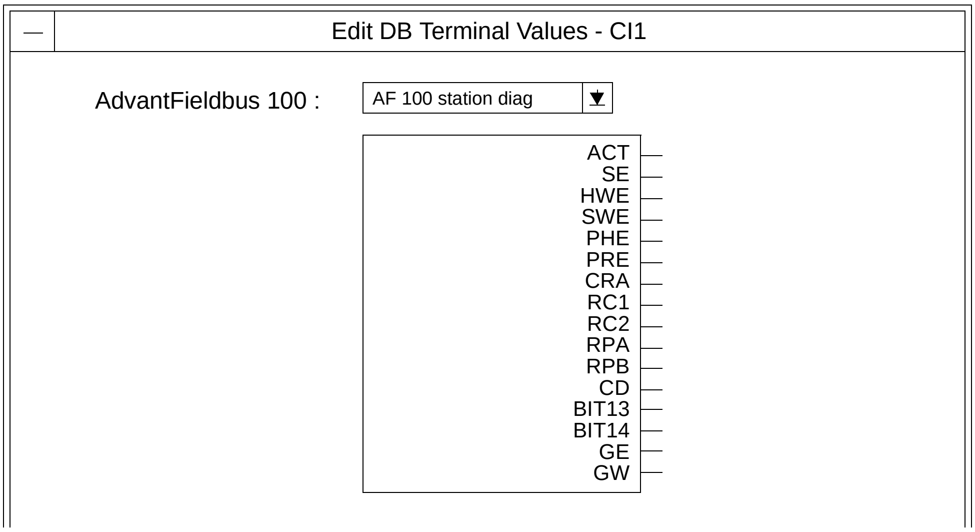


Value	Terminal
CI1	NAME
0	BUS
0	STATION
2	POSITION
1	IMPL
CI626	TYPE
1	MASTER
NONE	TIMESYNC
1	CABLE
NO	EN_DTMO
0	BUSNO
1	STNNO

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	CIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	predef	2	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI626/ CI627	–	**TYPE** of bus coupler module.	See call name.
MASTER	user	1	–	Comm. Interface in: 0=SLAVE mode 1=**MASTER** mode	–
TIMESYNC	user	NONE	–	**TIME SYNC**hronization. Values: NONE, MASTER, SLAVE	TIME_SYNC = MASTER: It is strongly recommended to use only a single PM645 processor module.
CABLE	user	1	–	**CABLE**(s). Values: 1=one cable is used 2=two physical cables needed for redundancy	–
EN_DTMO	user	NO	–	**EN**able **D**ouble **T**i**M**e-**O**ut. Enables longer time-out time for cyclic data on AF 100. Values: NO=short time-out YES=long time-out	Cannot be changed on-line. Shall be set when any station on the bus has communication redundancy.
BUSNO	user	0	–	**BUS N**umber.	Range 0–255
STNNO	user	1	–	**ST**atio**N N**umber.	Range 1–80
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

AF 100 station diag



AdvantFieldbus 100 : AF 100 station diag

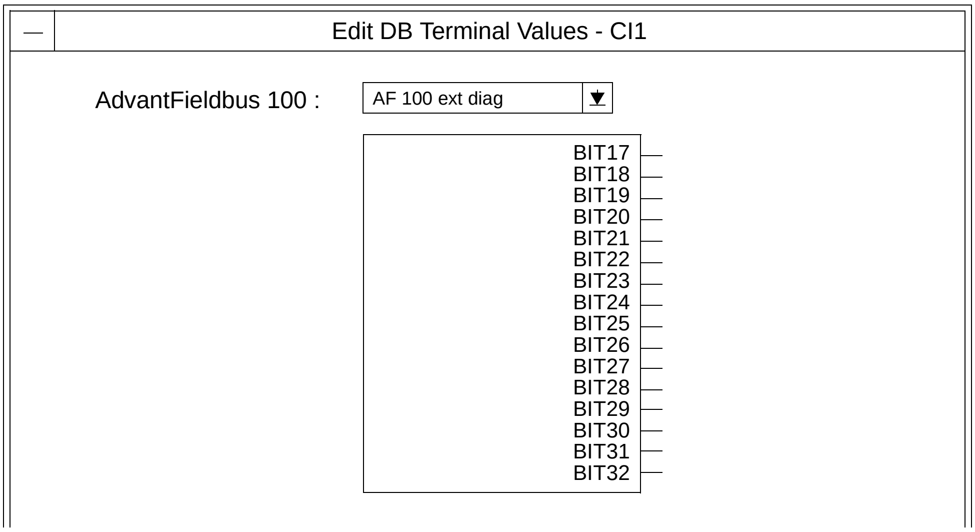
Terminal Description, AF 100 station diag

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ACT	system	–	B(r)	Station is **ACT**ive in normal operation mode.	–
SE	system	–	B(r)	**S**evere **E**rror.	Check connected station.
HWE	system	–	B(r)	**H**ard**W**are **E**rror.	Non-fatal error in the connected station.
SWE	system	–	B(r)	**S**oft**W**are **E**rror.	Check application program in the connected station.
PHE	system	–	B(r)	**P**eripheral **H**ardware **E**rror.	Check hardware in connected station.
PRE	system	–	B(r)	**PR**ocess **E**rror.	Possible I/O hardware or input signal error in the connected station.
CRA	system	–	B(r)	**C**able **R**edundancy **A**vailable.	Station is configured to have redundant media.
RC1	system	–	B(r)	**R**edundant **C**able **1** is bad.	Replace media (cable1).
RC2	system	–	B(r)	**R**edundant **C**able **2** is bad.	Replace media (cable2).
RPA	system	–	B(r)	**R**edundant **P**ower **A** failure.	Check power supply unit A.
RPB	system	–	B(r)	**R**edundant **P**ower **B** failure.	Check power supply unit B.
CD	system	–	B(r)	**C**hanged **D**iagnostics.	–

Terminal Description, AF 100 station diag (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
BIT13	system	–	B(r)	**BIT** number **13** of station diagnostics.	Reserved for future use.
BIT14	system	–	B(r)	**BIT** number **14** of station diagnostics.	Reserved for future use.
GE	system	–	B(r)	**G**eneral station **E**rror.	Check connected station.
GW	system	–	B(r)	**G**eneral **W**arning.	Check connected station.

AF 100 ext diag



Edit DB Terminal Values - CI1

AdvantFieldbus 100 : AF 100 ext diag

Terminal Description, AF 100 ext diag

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
BIT17	system	–	B(r)	**BIT** number **17** of extended station diagnostics.	Reserved for future use.
: : BIT32	system	–	B(r)	**BIT** number **32** of extended station diagnostics.	Reserved for future use.

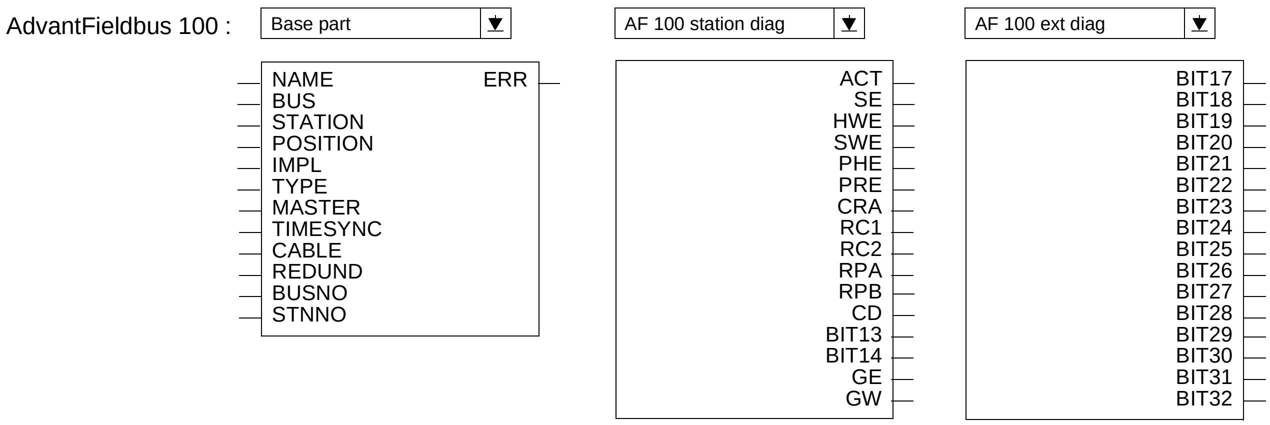
AdvantFieldbus 100 — CI630, CI631

Summary

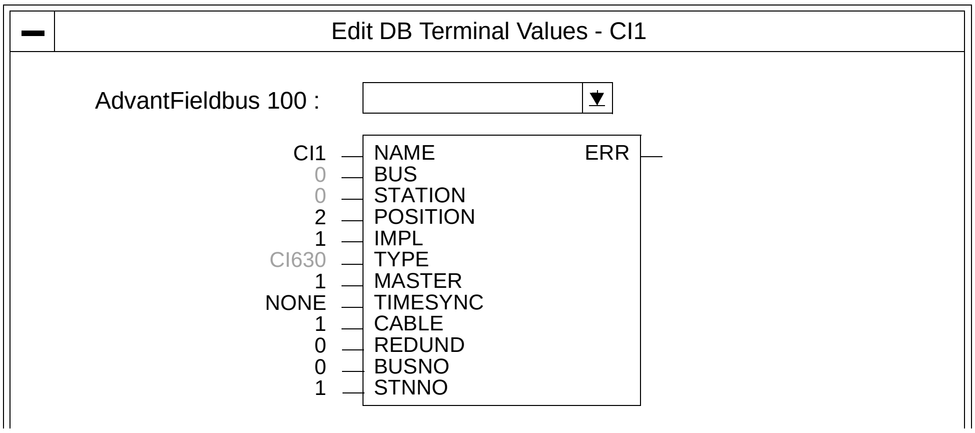
CI630 and CI631 are bus couplers to Advant Fieldbus 100 that support redundancy. CI630 uses coaxial line, CI631 twisted pair line. The data base element shows diagnostic information of the coupler as well as status information of the Advant Controller 160 station in general. See Section Advant Controller 160 Station Status in Chapter Introduction for detailed information.

Up to two AdvantFieldbus 100 elements can be created.

Overview



Base part

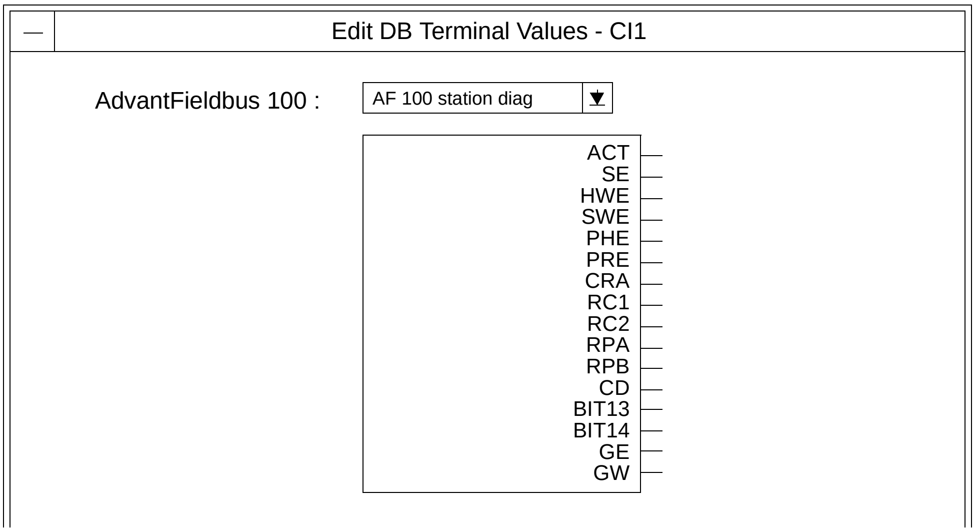


CI1	NAME
0	BUS
0	STATION
2	POSITION
1	IMPL
CI630	TYPE
1	MASTER
NONE	TIMESYNC
1	CABLE
0	REDUND
0	BUSNO
1	STNNO

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	CIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	2	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI630/ CI631	–	**TYPE** of bus coupler module.	See call name.
MASTER	user	1	–	Comm. Interface in: 0=SLAVE mode 1=**MASTER** mode	–
TIMESYNC	user	NONE	–	**TIME SYNC**hronization. Values: NONE, MASTER, SLAVE	TIME_SYNC = MASTER: It is strongly recommended to use only a single PM645 processor module.
CABLE	user	1	–	**CABLE**(s). Values: 1=one cable is used 2=two physical cables needed for redundancy	–
REDUND	user	0	–	**REDUND**ancy is 0=disabled 1=enabled	–
BUSNO	user	0	–	**BUS N**umber.	Range 0–255
STNNO	user	1	–	**ST**atio**N N**umber.	Range 1–80
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

AF 100 station diag



Edit DB Terminal Values - CI1

AdvantFieldbus 100 : AF 100 station diag

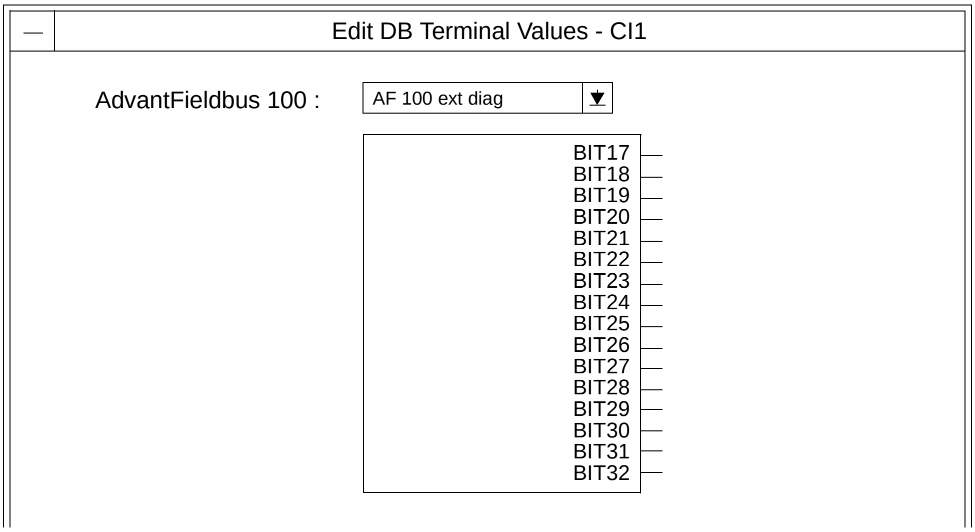
Terminal Description, AF 100 station diag

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ACT	system	–	B(r)	Station is **ACT**ive in normal operation mode.	–
SE	system	–	B(r)	**S**evere **E**rror.	Check connected station.
HWE	system	–	B(r)	**H**ard**W**are **E**rror.	Non-fatal error in the connected station.
SWE	system	–	B(r)	**S**oft**W**are **E**rror.	Check application program in the connected station.
PHE	system	–	B(r)	**P**eripheral **H**ardware **E**rror.	Check hardware in connected station.
PRE	system	–	B(r)	**PR**ocess **E**rror.	Possible I/O hardware or input signal error in the connected station.
CRA	system	–	B(r)	**C**able **R**edundancy **A**vailable.	Station is configured to have redundant media.
RC1	system	–	B(r)	**R**edundant **C**able **1** is bad.	Replace media (cable1).
RC2	system	–	B(r)	**R**edundant **C**able **2** is bad.	Replace media (cable2).
RPA	system	–	B(r)	**R**edundant **P**ower **A** failure.	Check power supply unit A.
RPB	system	–	B(r)	**R**edundant **P**ower **B** failure.	Check power supply unit B.
CD	system	–	B(r)	**C**hanged **D**iagnostics.	–

Terminal Description, AF 100 station diag (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BIT13	system	–	B(r)	**BIT** number **13** of station diagnostics.	Reserved for future use.
BIT14	system	–	B(r)	**BIT** number **14** of station diagnostics.	Reserved for future use.
GE	system	–	B(r)	**G**eneral station **E**rror.	Check connected station.
GW	system	–	B(r)	**G**eneral **W**arning.	Check connected station.

AF 100 ext diag


Edit DB Terminal Values - CI1

AdvantFieldbus 100 : AF 100 ext diag

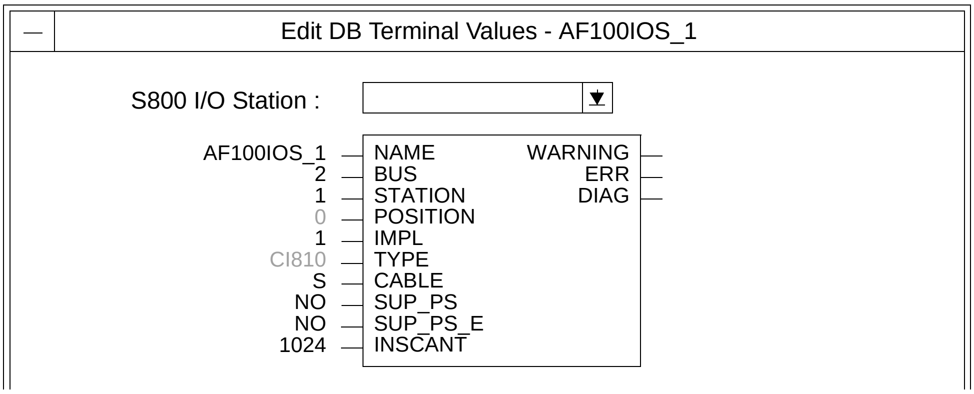
Terminal Description, AF 100 ext diag

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BIT17	system	–	B(r)	**BIT** number **17** of extended station diagnostics.	Reserved for future use.
: : BIT32	system	–	B(r)	**BIT** number **32** of extended station diagnostics.	Reserved for future use.

S800 I/O Station CI810

Summary

The S800 I/O Station data base element specifies an S800 I/O Station on Advant Fieldbus 100 connected to an Advant Controller 160. The data base element contains diagnostic information of the S800 I/O station.



Edit DB Terminal Values - AF100IOS_1

S800 I/O Station :

AF100IOS_1 — NAME
2 — BUS
1 — STATION
0 — POSITION
1 — IMPL
CI810 — TYPE
S — CABLE
NO — SUP_PS
NO — SUP_PS_E
1024 — INSCANT

WARNING —
ERR —
DIAG —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AF100IOS_x	–	Unique **NAME** of the I/O station.	Max. 20 characters.
BUS	user	0	–	Number of the **BUS** connected.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number. Part of address.	
POSITION	predef	0	–	**POSITION**. Part of address.	
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI810	–	Module **TYPE** designation.	–
CABLE	user	S	–	**CABLE** connection: S=Single, R=Redundant	–

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
SUP_PS	user	NO	–	Enable **SUP**ervision of redundant **P**ower **S**upplies. Values: YES=enabled NO=not enabled	–
SUP_PS_E	user	NO	–	Enable **SUP**ervision of redundant **P**ower **S**upplies on the opto-fibre **E**xpansion. Values: YES=enabled NO=not enabled	For future use.
INSCANT	user	1024	–	**SCAN**ner cycle time on AF 100 for module status. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Function of the CI810 module

The S800 I/O Station (CI810) data base element specifies an S800 I/O station connected to an Advant Controller 160 via Advant Fieldbus 100. The data base element contains diagnostic information of both the CI810 communication module itself and an general overview status of its I/O modules.

It is possible to disable the function of the element by setting the IMPL terminal to 0. The data base element can also be reconfigured to specify a different Advant Fieldbus 100 bus if one fieldbus is removed and another is inserted in the system.

Communication module set-up procedure

With the data base element you set up the communication module for the process communication program.

The communication module set-up procedure includes:

1. Implementation
2. Disabling
3. Selection of address (BUS, STATION) terminals
4. Parameters
5. Load calculation on AF 100 for S800 I/O station
6. Diagnostics

1. Implementation

The Advant Fieldbus 100 data base communication module is configured with its parameters and started at system INIT if IMPL is set to 1. Setting IMPL to 1 in a running system means that the CI810 communication module is configured with its parameters and started. Connection to the I/O station on Advant Fieldbus 100 is established. Setting IMPL to 0 in a system in operational mode means that the CI810 communication module is shut down and the connection to the I/O station is lost.

2. Disabling

The SERVICE terminal has no functionality, use the IMPL terminal to disable the S800 I/O station.

3. Selection of address (BUS, STATION) terminals

How to select the address terminals BUS and STATION can be found in section “Address terminals BUS, STATION, POSITION and SUBPOS” in the Introduction.

For the S800 I/O Station data base element the engineering tool checks that the specified BUS and STATION combination is unique within Advant Controller 160. In addition for the CI810 data base element it is checked that no DSP data base element is configured with the same BUS and STATION combination.

4. Parameters

The CI810 communication module can be connected to single or redundant media (one or two cables). The terminal CABLE specifies if single or redundant media is installed for the Advant Fieldbus 100. The default is single media.

The CI810 includes two digital inputs (SA and SB) for monitoring of redundant power supply. The SUP_PS specifies if the monitoring shall be enabled (YES) or disabled (NO).

The SUP_PS_E terminals is currently not used.

5. Load calculation on AF 100 for S800 I/O station

The load on AF 100 for one S800 I/O station (CI810 + all S800 I/O modules in the station) can be calculated using the formula below:

S800 I/O Station load= CI810 load + ΣS800 I/O module load

CI810 load = 0.033%.

The load figures for the I/O modules depends on the I/O module and the selected cycle time.

The total load on AF 100 may not exceed 75%. To calculate the total load on AF 100 see *Advant Fieldbus 100 User’s Guide*.

6. Diagnostics

The S800 I/O station data base element indicates diagnostic information for an S800 I/O station on Advant Fieldbus 100. The ERR terminal indicates fatal errors and WARNING terminal indicates non-fatal errors. The DIAG terminal specifies a more detailed description of what causes the error or warning indication. One or more diagnostics indicators may be set. The conditions are listed in descending order of severity. The less severe indicators will be omitted, if all indicators do not fit within the available 20 characters.

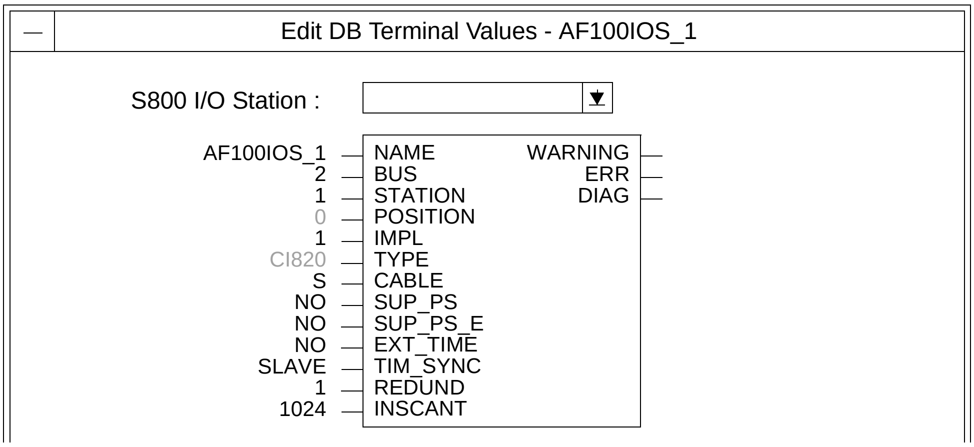
S800 I/O Station data base element diagnostic information

Condition	WARNING	ERR	DIAG	Action
IDentification **F**ailure	–	1	IDF	Verify that connected station is of specified type.
Station **N**ot **A**vailable	–	1	SNA	Check comm. media. Check connected station.
ACTive / NOT active	– / 1	– / –	ACT / –	Station is active / Station is NOT active in normal operation mode
General station **E**rror	–	1	GE	Check connected station.
Severe **E**rror	–	1	SE	Check connected station.
General **W**arning	1	–	GW	Check connected station.
Station S**W** **E**rror	–	1	SWE	Check application program in the connect station.
Peripheral **H**ardware **E**rror	1	–	PHE	Check hardware in the connected station
Redundant **C**able **1** bad	1	–	RC1	Check media (cable 1)
Redundant **C**able **2** bad	1	–	RC2	Check media (cable 2)
Redundant **P**ower **A** failure	1	–	RPA	Check power supply unit A
Redundant **P**ower **B** failure	1	–	RPB	Check power supply unit B
PRocess **E**rrors	1	–	PRE	Possible I/O hardware or input signal error in the connected station.
Station **HW** **E**rror	1	–	HWE	Non-fatal error in the connected station
Cable **R**edundancy **A**vailable	–	–	CRA	Station is configured to have redundant media if indicated in DIAG
Changed **D**iagnostics	–	–	CD	–

S800 I/O Station CI820

Summary

The S800 I/O Station data base element specifies an S800 I/O Station on Advant Fieldbus 100 connected to an Advant Controller 160 that supports redundant CI820 modules. The data base element contains diagnostic information of the S800 I/O station and the physical CI820 submodule(s).



Edit DB Terminal Values - AF100IOS_1

S800 I/O Station :

AF100IOS_1 — NAME
2 — BUS
1 — STATION
0 — POSITION
1 — IMPL
CI820 — TYPE
S — CABLE
NO — SUP_PS
NO — SUP_PS_E
NO — EXT_TIME
SLAVE — TIM_SYNC
1 — REDUND
1024 — INSCANT

WARNING —
ERR —
DIAG —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AF100IOS_x	–	Unique **NAME** of the I/O station.	Max. 20 characters.
BUS	user	0	–	Number of the **BUS** connected.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number. Part of address.	
POSITION	predef	0	–	**POSITION**. Part of address.	
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	CI820	–	Module **TYPE** designation.	–
CABLE	user	S	–	**CABLE** connection: S=Single, R=Redundant	–

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
SUP_PS	user	NO	–	Enable **SUP**ervision of redundant **P**ower **S**upplies. Values: YES=enabled NO=not enabled	–
EXT_TIME	user	NO	–	**EXT**ended **TIME**-out.	–
TIM_SYNC	user	SLAVE	–	**TIM**e **SYNC**hronisation. Values: SLAVE, NONE.	–
SUP_PS_E	user	NO	–	Enable **SUP**ervision of redundant **P**ower **S**upplies on the opto-fibre **E**xpansion. Values: YES=enabled NO=not enabled	For future use.
REDUND	user	1	–	**REDUND**ancy: 1=Redundant CI820 0=Single CI820 (not used)	–
INSCANT	user	1024	–	**SCAN**ner cycle time on AF 100 for module status. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Function of the CI820 module

The S800 I/O Station (CI820) data base element specifies an S800 I/O station connected to an Advant Controller 160 via Advant Fieldbus 100. The data base element contains diagnostic information of both the CI820 communication module itself and an general overview status of its I/O modules.

It is possible to disable the function of the element by setting the IMPL terminal to 0. The data base element can also be reconfigured to specify a different Advant Fieldbus 100 bus if one fieldbus is removed and another is inserted in the system.

Communication module set-up procedure

With the data base element you set up the communication module for the process communication program.

The communication module set-up procedure includes:

1. Implementation
2. Disabling
3. Selection of address (BUS, STATION) terminals
4. Parameters

5. Load calculation on AF 100 for S800 I/O station
6. Diagnostics

1. Implementation

The Advant Fieldbus 100 data base communication module is configured with its parameters and started at system INIT if IMPL is set to 1. Setting IMPL to 1 in a running system means that the CI820 communication module is configured with its parameters and started. Connection to the I/O station on Advant Fieldbus 100 is established. Setting IMPL to 0 in a system in operational mode means that the CI810 communication module is shut down and the connection to the I/O station is lost.

2. Disabling

The SERVICE terminal has no functionality, use the IMPL terminal to disable the S800 I/O station.

3. Selection of address (BUS, STATION) terminals

How to select the address terminals BUS and STATION can be found in section “Address terminals BUS, STATION, POSITION and SUBPOS” in the Introduction.

For the S800 I/O Station data base element the engineering tool checks that the specified BUS and STATION combination is unique within the Advant Controller 160. In addition for the CI820 data base element it is checked that no DSP data base element is configured with the same BUS and STATION combination.

4. Parameters

The CI820 communication module can be connected to single or redundant media (one or two cables). The terminal CABLE specifies if single or redundant media is installed for the Advant Fieldbus 100. The default is single media.

The CI820 includes two digital inputs (SA and SB) for monitoring of redundant power supply. The SUP_PS specifies if the monitoring shall be enabled (YES) or disabled (NO).

The SUP_PS_E terminals is currently not used.

5. Load calculation on AF 100 for S800 I/O station

The load on AF 100 for one S800 I/O station (CI820 + all S800 I/O modules in the station) can be calculated using the formula below:

S800 I/O Station load= CI820 load + ΣS800 I/O module load

CI820 load = 0.033%.

The load figures for the I/O modules depends on the I/O module and the selected cycle time.

The total load on AF 100 may not exceed 75%. To calculate the total load on AF 100 see *Advant Fieldbus 100 User’s Guide*.

6. Diagnostics

The S800 I/O station data base element indicates diagnostic information for an S800 I/O station on Advant Fieldbus 100. The ERR terminal indicates fatal errors and WARNING terminal indicates non-fatal errors. The DIAG terminal specifies a more detailed description of what causes the error or warning indication. One or more diagnostics indicators may be set. The conditions are listed in descending order of severity. The less severe indicators will be omitted, if all indicators do not fit within the available 20 characters.

S800 I/O Station data base element diagnostic information

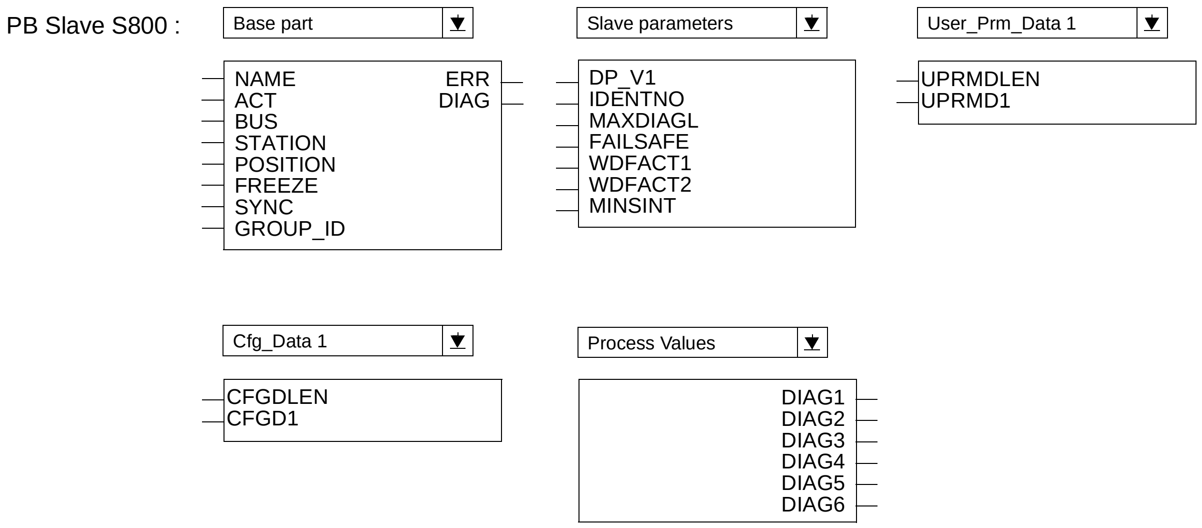
Condition	**WARNING**	**ERR**	**DIAG**	**Action**
IDentification **F**ailure	–	1	IDF	Verify that connected station is of specified type.
Station **N**ot **A**vailable	–	1	SNA	Check comm. media. Check connected station.
ACTive / NOT active	– / 1	– / –	ACT / –	Station is active / Station is NOT active in normal operation mode
General station **E**rror	–	1	GE	Check connected station.
Severe **E**rror	–	1	SE	Check connected station.
General **W**arning	1	–	GW	Check connected station.
Station S**W** **E**rror	–	1	SWE	Check application program in the connect station.
Peripheral **H**ardware **E**rror	1	–	PHE	Check hardware in the connected station
Redundant **C**able **1** bad	1	–	RC1	Check media (cable 1)
Redundant **C**able **2** bad	1	–	RC2	Check media (cable 2)
Redundant **P**ower **A** failure	1	–	RPA	Check power supply unit A
Redundant **P**ower **B** failure	1	–	RPB	Check power supply unit B
PRocess **E**rrors	1	–	PRE	Possible I/O hardware or input signal error in the connected station.
Station **HW** **E**rror	1	–	HWE	Non-fatal error in the connected station
Cable **R**edundancy **A**vailable	–	–	CRA	Station is configured to have redundant media if indicated in DIAG
Changed **D**iagnostics	–	–	CD	–

PROFIBUS FCI CI830

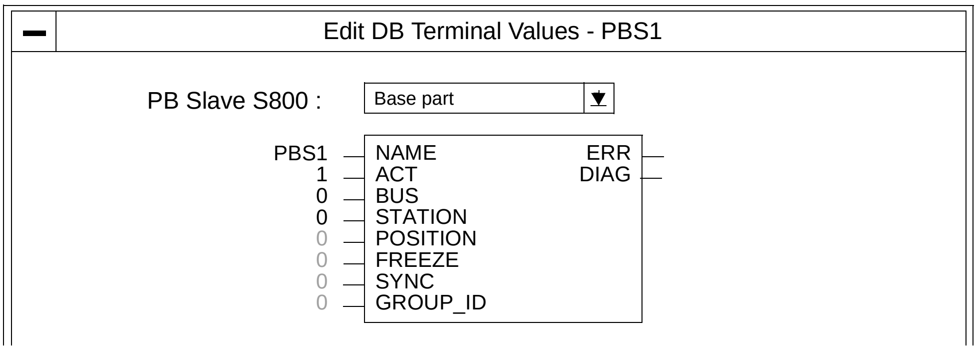
Summary

The PROFIBUS Slave data base element CI830 describes a PROFIBUS-DP slave device. The Communication Interface CI830 is used to connect S800 I/O to PROFIBUS.

Overview



Base part



PB Slave S800 : Base part

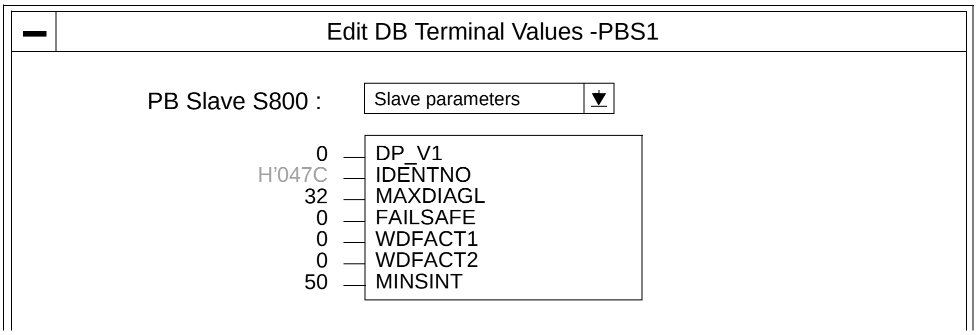
PBS1	NAME
1	ACT
0	BUS
0	STATION
0	POSITION
0	FREEZE
0	SYNC
0	GROUP_ID

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PBSx	–	Unique module **NAME**.	Max. 20 characters.
ACT	user	1	–	The DB element is: 0=spare 1=**ACT**ive	–
BUS	user	–	–	Unique **BUS** number of the PROFIBUS.	Range 0–255(1)
STATION	user	0	–	**STATION** number representing the slave on the PROFIBUS.	Range 0–79
POSITION	predef	0	–	**POSITION** of the module.	–
FREEZE	predef	0	B(r/w)	**FREEZE** PROFIBUS slave.	Not supported in this version.
SYNC	predef	0	B(r/w)	**SYNC**hronize PROFIBUS slave.	Not supported in this version.
GROUP_ID	predef	0	–	**GROUP ID** of PROFIBUS slave.	GROUP ID for the FREEZE and SYNC functions. Not supported in this version.
ERR	system	0	B(r)	**ERR**or flag indicating the PROFIBUS slave status (the status error bits of the slave station are logically or-ed to the flag).	–
DIAG	system	0	B(r)	**DIAG**nostic changed flag for PROFIBUS station.	–

(1) BUS number 0 cannot be used in conjunction with STATION number 0.

Slave parameters



PB Slave S800 : Slave parameters

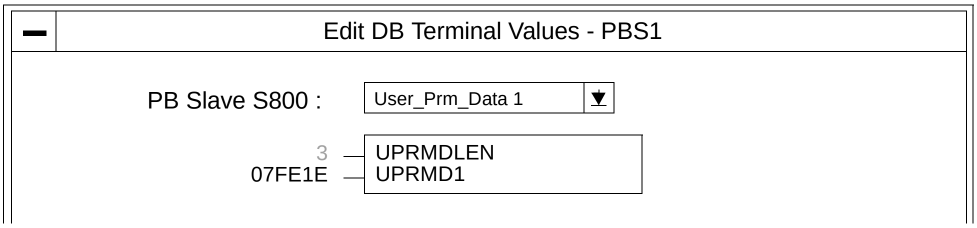
0	DP_V1
H'047C	IDENTNO
32	MAXDIAGL
0	FAILSAFE
0	WDFACT1
0	WDFACT2
50	MINSINT

Terminal Description, Slave parameters

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DP_V1	user	0	–	PROFIBUS slave uses **DP/V1** (=DP/E) functionality: 0=DP-slave CFG data of EN50170 1=DP-slave CFG data of DPV1.	–
IDENTNO	predef	H'047C	–	Unique PROFIBUS slave **IDENT**ifier. Assigned by PNO.	–
MAXDIAGL	user	32	–	**MAX**imum **DIAG**nostic data **L**ength.	Range 6–236
FAILSAFE	user	0	–	**FAILSAFE** capability: 0= The master sends output data with zero length 1= The master sends output data with all outputs set to zero.	–
WDFACT1	user	0	–	**W**atch **D**og **FACT**or **1**.	Range 0–255. After expiration of timer the slave sets outputs to 0.(1)
WDFACT2	user	0	–	**W**atch **D**og **FACT**or **2**.	
MINSINT	user	50	–	**MIN**imum **S**lave **INT**erval. Minimum time between two poll cycles (0–65535 × 0.1ms).	Range 0–65535(2).

(1) Slave supervision of connection with time out T_{WD} = WDFACT1 × WDFACT2 × 10ms. No supervision if WDFACT1 = WDFACT2 = 0.
(2) If baudrate 12 Megabaud is used, values > 178 are avoided.

User_Prm_Data 1



Edit DB Terminal Values - PBS1

PB Slave S800 : User_Prm_Data 1

3 — UPRMDLEN
07FE1E — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
UPRMDLEN	predef	3	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	07FE1E	–	**U**ser **P**a**R**a**M**eter **D**ata, 3 bytes.	Hexadecimal number. See Table 24

Only bit 1and bit 2 in byte 1 of the User Parameter must be changed by the user. The possible configuration parameters are described in Table 24. Default values are marked bold.

Table 24. Parameter Definition

Configuration parameter	**Values**	**Location**
Power supervision	0 = Power supervision of FCI off **1 = Power supervision of FCI on**	Byte 1, bit 1
Power supervision of opto-extension	0 = Power supervision of opto-extension off **1 = Power-supervision of opto-extension on**	Byte 1, bit 2

Table 25 includes the possible HEX values for all bytes. The default value is marked bold.

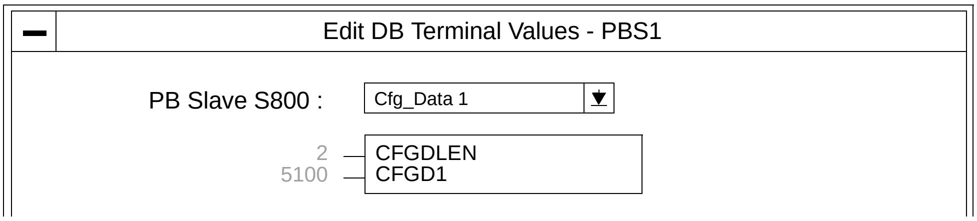
Table 25. User Parameter Definitions, Bytes Description

Byte number	**UPRMD**	**Power supervision of FCI**	**Power supervision of opto-extension**
1	01	off	off
	03	on	off
	05	off	on
	07	**on**	**on**
2	FE		
3	1E		

NOTE

Do not use other values for UPRMD than stated in Table 25.

Cfg_Data 1



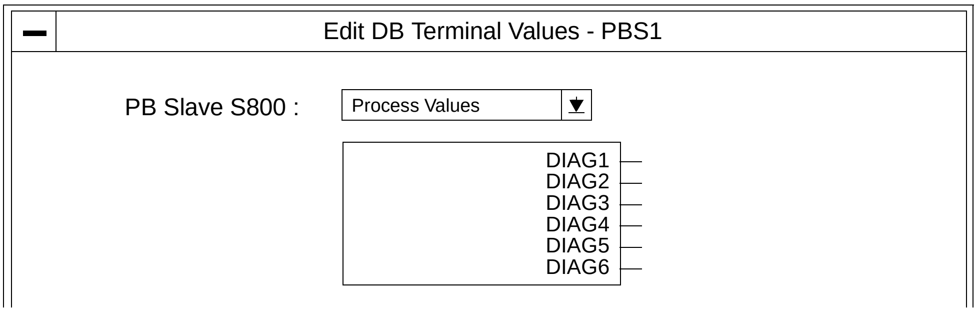
PB Slave S800 : Cfg_Data 1

2 — CFGDLEN
5100 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Must be calculated from the actual configuration.	–
CFGD1	predef	5100	–	**C**on**F**i**G**uration **D**ata, 2 bytes.	–

Process Values



PB Slave S800 : Process Values

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DIAG1	system	–	I	**DIAG**nostic value terminals reflecting station status bytes **1**.	See Table 26.
DIAG2	system	–	I	**DIAG**nostic value terminals reflecting station status bytes **2**.	
:	:	:	:	:	
DIAG6	system	–	I	**DIAG**nostic value terminals reflecting station status bytes **6**.	

Table 26. CI830 Memory Map Definitions

Byte	**Bit**	**Description**
1	0	Active: The FCI is active and executing in normal operation mode.
	1	Severe error: Severe errors in the station, the I/O scanner is not active. Reason: Address error, bus error, software watchdog, etc.
	2	Station HW error: Minor error conditions in FCI hardware, the I/O scanner is executing. Reason: for example redundant power supply error
	3	Station SW error: The scanner is not executing correctly. Restarting the FCI should probably remedy the error. Reason: for example check sum error
	4	Peripheral hardware error: Hardware errors or missing hardware in peripheral equipment controlled by the FCI. Reason: Hardware errors on I/O devices
	5	Process errors: “Soft” error conditions in I/O scanner Reason: for example I/O channels out of range
	6	Spare (default value 0)
	7	Spare (default value 0)
2	0	Spare (default value 0)
	1	Redundant power A failure
	2	Redundant power B failure
	3	Changed diagnostics station: The diagnostics has changed for any object since last “List of Objects With Errors/New Diagnostics” was read (same as bit 23).
	4	Spare (default value 0)
	5	Spare (default value 0)
	6	General (unspecified) FCI error
	7	General (unspecified) station warning

Table 26. CI830 Memory Map Definitions (Continued)

Byte	**Bit**	**Description**
3	0–3	FCI state(1) 0 = Operational 1 = OSP(2) 2 = Ready 3 = Not configured 4 = Error 5 = Init 6 = FIM(3) 8 = Module delete 10 = Wrong module type 11 = Configuration running 12 = Forced to error 13 = No answer
	4	FCI error: FCI in error state
	5	FCI warning: Minor error (non-fatal)
	6	Spare (default value 0)
	7	FCI changed diagnostics (same as bit 11)
4	0–7	Spare (default value 0)
5	0–7	Spare (default value 0)
6	0–7	Spare (default value 0)

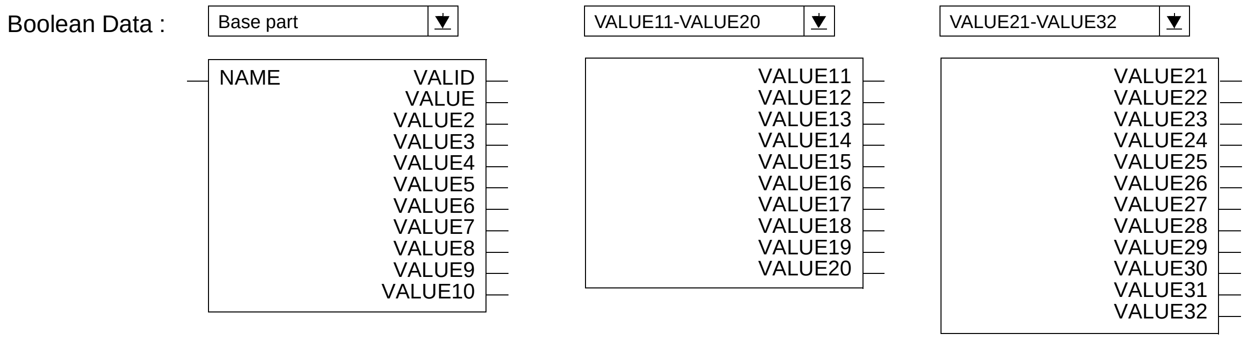
(1) For detailed information, refer to the *S800 I/O User’s Guide.*
(2) Outputs Set as Predefined, that is, outputs are set to the safe values specified by parameters.
(3) Firmware maintenance

Boolean Data DAT(B)

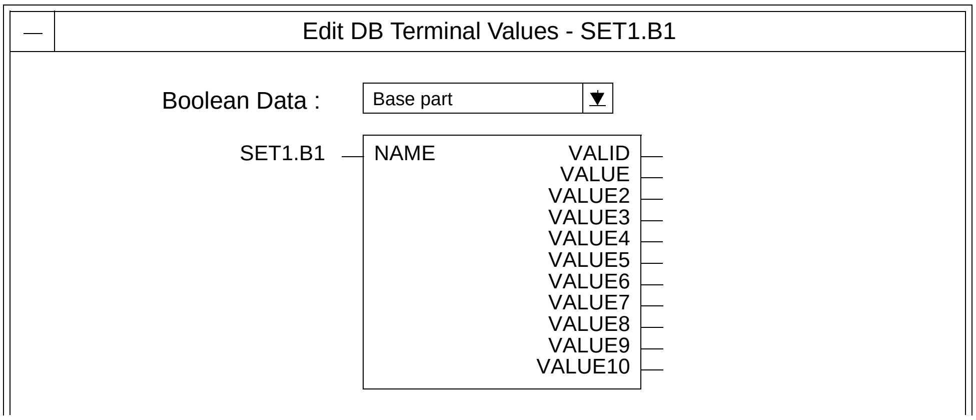
Summary

The DAT(B) data base element holds 32 packed boolean data values. The data values are given a name and a valid flag.

Overview



Base part



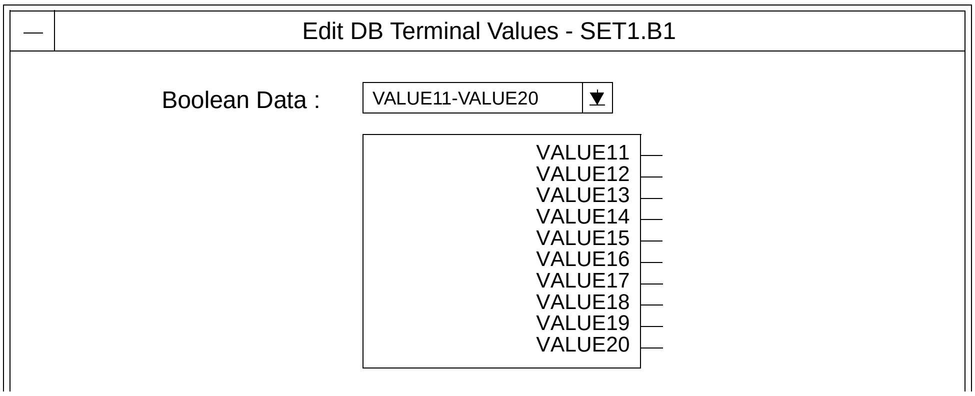
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.B1
VALID	PC	0	B(r/w)	**VALID**. Can be set by PC element (or MMI, …).	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE	system	–	B(r/w)	Boolean **VALUE**.	–
VALUE2	system	–	B(r/w)	Boolean **VALUE**.	–
: :					
VALUE10	system	–	B(r/w)	Boolean **VALUE**.	–

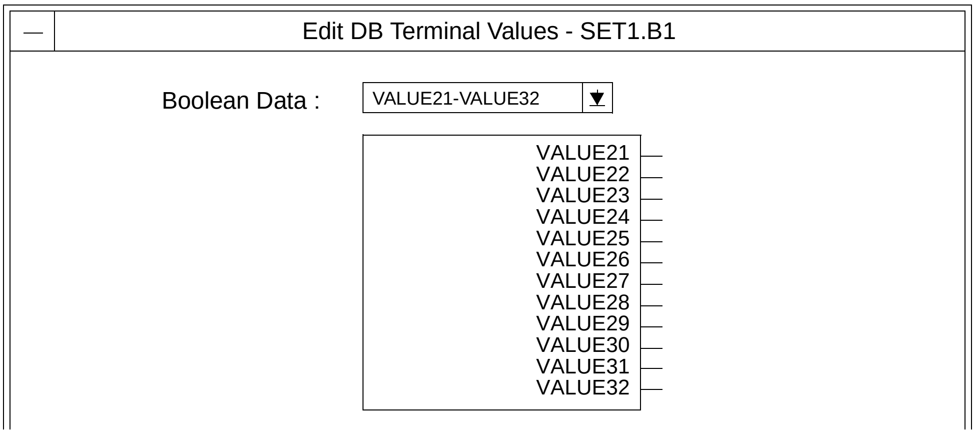
VALUE11-VALUE20



Edit DB Terminal Values - SET1.B1

Boolean Data : VALUE11-VALUE20

VALUE21-VALUE32



Edit DB Terminal Values - SET1.B1

Boolean Data : VALUE21-VALUE32

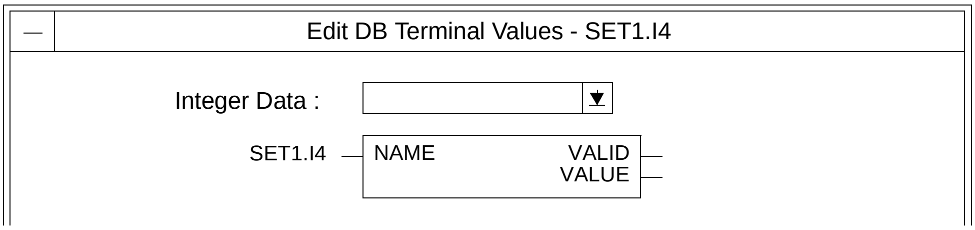
Terminal Description, VALUE11-VALUE32

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE11	system	–	B(r/w)	Boolean **VALUE**.	–
VALUE12	system	–	B(r/w)	Boolean **VALUE**.	–
: : VALUE32	system	–	B(r/w)	Boolean **VALUE**.	–

Integer Data DAT(I)

Summary

The DAT(I) data base element holds one 16 bit integer data value. The data value is given a name and a valid flag.



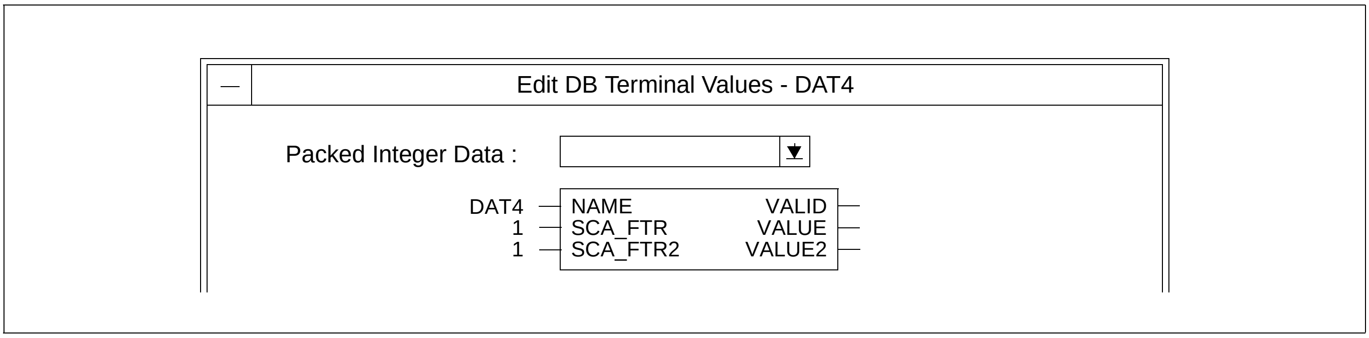
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.I1
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–

Packed Integer Data DAT(II)

Summary

The DAT(II) data base element holds two 16 bit integer values. The data values are given a name and a valid flag. The element can not be created automatically by a DSP.



Edit DB Terminal Values - DAT4

Packed Integer Data :

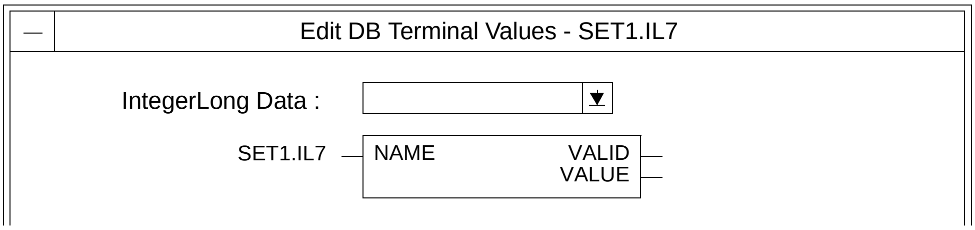
Terminal Description

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	DATx	–	Unique element **NAME**.	Max. 19 characters. One character (L or H) will be added for Operator Station.
SCA_FTR	user	1	–	**SCA**ling **F**ac**T**o**R** for VALUE. Allowed values: 0.001, 0.01, 0.1, 1, 10, 100, 1000.	–
SCA_FTR2	user	1	–	**SCA**ling **F**ac**T**o**R** for VALUE**2**. Allowed values: 0.001, 0.01, 0.1, 1, 10, 100, 1000.	–
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–
VALUE2	system	–	I(r/w)	**VALUE** number **2** of type Integer.	–

IntegerLong Data DAT(IL)

Summary

The DAT(IL) data base element contains one 32 bit integer data value. The data value is given a name and a valid flag.



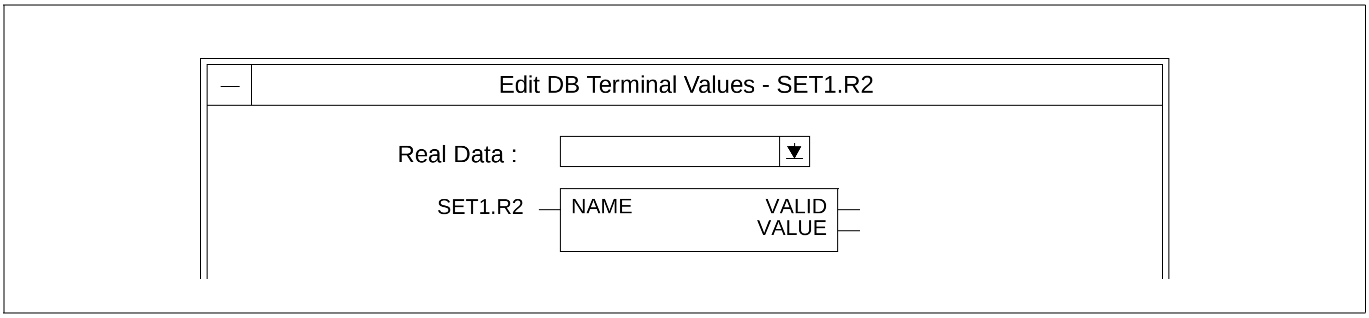
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.IL1
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

Real Data DAT(R)

Summary

The DAT(R) data base element holds one real data value. The data value is given a name and a valid flag.



Edit DB Terminal Values - SET1.R2

Real Data :

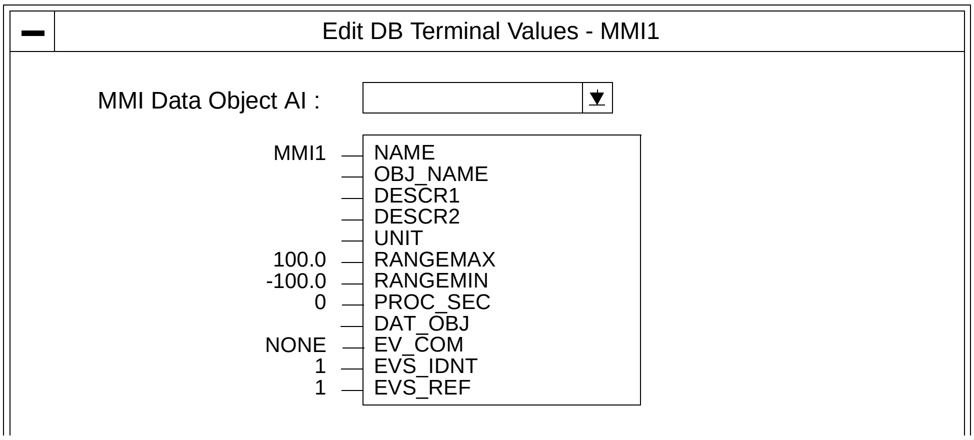
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.R1
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	R(r/w)	**VALUE** of type Real.	–

MMI Data Object AI DAT_AI

Summary

The DAT_AI data base element represents an Analog Input object mapped to a DAT object and possibly to an Event Channel in the MMI (for instance, SattGraph 5000).



MMI1	NAME
	OBJ_NAME
	DESCR1
	DESCR2
	UNIT
100.0	RANGEMAX
-100.0	RANGEMIN
0	PROC_SEC
	DAT_OBJ
NONE	EV_COM
1	EVS_IDNT
1	EVS_REF

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MMIx	–	Unique **NAME** of the element.	Max. 20 characters.
OBJ_NAME	user		–	**OBJ**ect **NAME** in MMI.	Max. 20 characters.
DESCR1	user		–	Object **DESCR**iption, part **1**.	Max. 20 characters.
DESCR2	user		–	Object **DESCR**iption, part **2**.	Max. 8 characters.
UNIT	user		–	**UNIT**.	Max. 6 characters.
RANGEMAX	user	100.0	–	**RANGE MAX**imum value.	–
RANGEMIN	user	-100.0	–	**RANGE MIN**imum value.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion.	0–16
DAT_OBJ	user	*	–	Reference to a **DAT**(R) **OBJ**ect which must be referenced itself by a DSP element.	–
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.

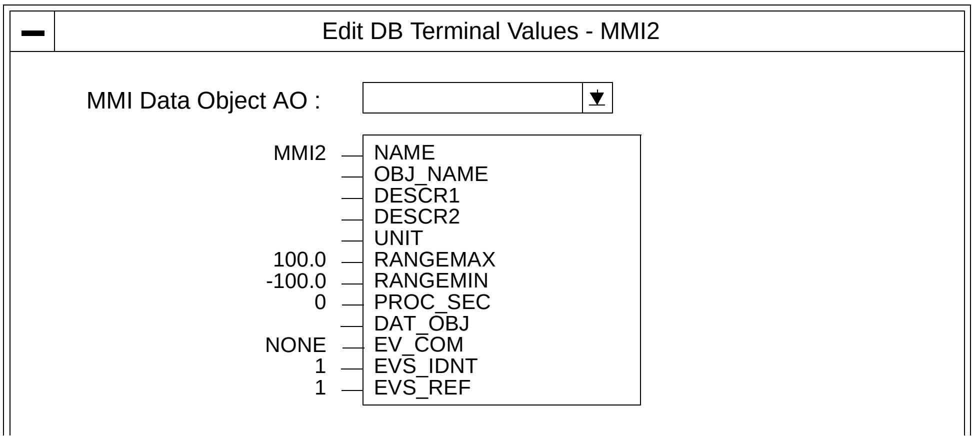
Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32

MMI Data Object AO DAT_AO

Summary

The DAT_AO data base element represents an Analog Output object mapped to a DAT object and possibly to an Event Channel in the MMI (for instance, SattGraph 5000).



MMI Data Object AO :

MMI2	NAME
	OBJ_NAME
	DESCR1
	DESCR2
	UNIT
100.0	RANGEMAX
-100.0	RANGEMIN
0	PROC_SEC
	DAT_OBJ
NONE	EV_COM
1	EVS_IDNT
1	EVS_REF

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MMIx	–	Unique **NAME** of the element.	Max. 20 characters.
OBJ_NAME	user		–	**OBJ**ect **NAME** in MMI.	Max. 20 characters.
DESCR1	user		–	Object **DESCR**iption, part **1**.	Max. 20 characters.
DESCR2	user		–	Object **DESCR**iption, part **2**.	Max. 8 characters.
UNIT	user		–	**UNIT**.	Max. 6 characters.
RANGEMAX	user	100.0	–	**RANGE MAX**imum value.	–
RANGEMIN	user	-100.0	–	**RANGE MIN**imum value.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion.	0–16
DAT_OBJ	user	*	–	Reference to a **DAT**(R) **OBJ**ect which must be referenced itself by a DSP element.	–
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.

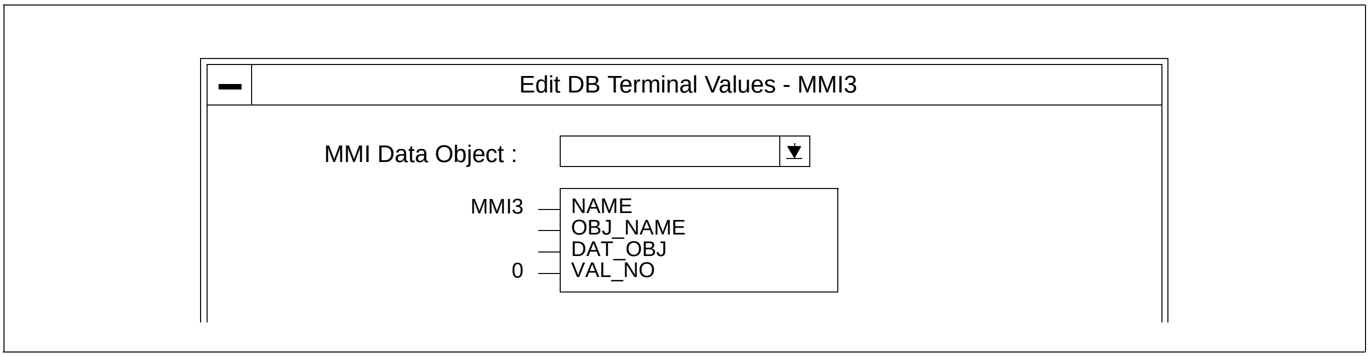
Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32

MMI Data Object DAT_DAT

Summary

The DAT_DAT data base element represents a DAT object in the MMI (for instance, SattGraph 5000).



MMI3 — NAME
— OBJ_NAME
— DAT_OBJ
0 — VAL_NO

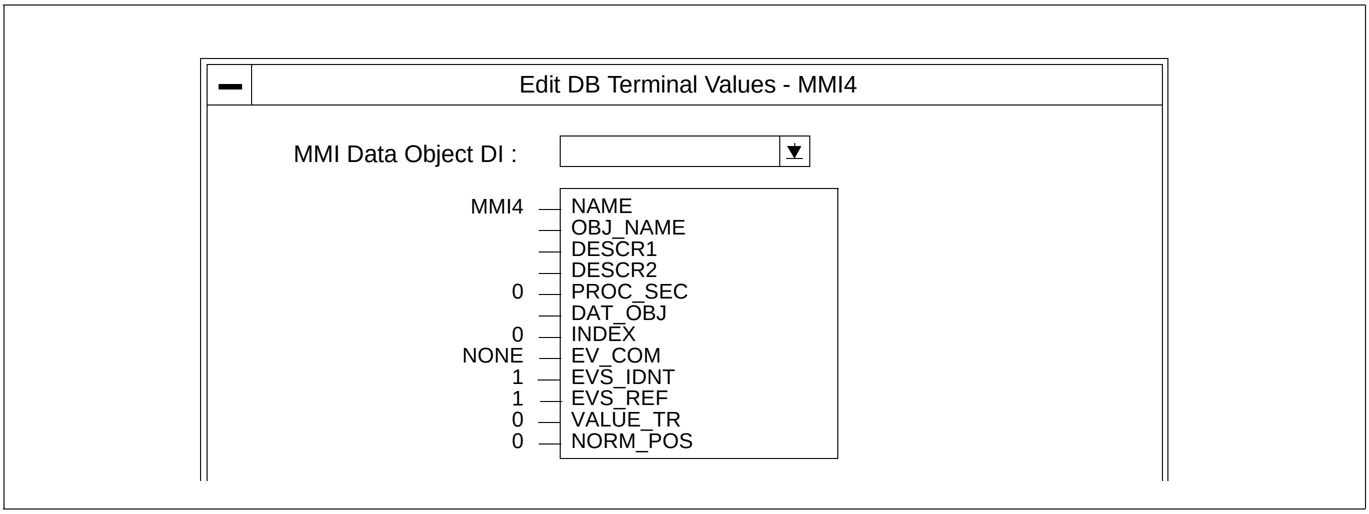
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	MMIx	–	Unique **NAME** of the element.	Max. 20 characters.
OBJ_NAME	user		–	**OBJ**ect **NAME** in MMI.	Max. 20 characters.
DAT_OBJ	user	*	–	Reference to a **DAT OBJ**ect which must be referenced itself by a DSP element. Allowed references: DAT(B), DAT(I), DAT(II), DAT(IL), or DAT(R).	–
VAL_NO	user	0	–	**VAL**ue **N**umber. Applies when the DAT object that is referenced by terminal DAT_OBJ is of type DAT(II). 0=DAT object is not of type DAT(II) 1=terminal VALUE of DAT(II) is used 2=terminal VALUE2 of DAT(II) is used	–

MMI Data Object DI DAT_DI

Summary

The DAT_DI data base element represents an Digital Input object mapped to a DAT object and possibly to an Event Channel in the MMI (for instance SattGraph 5000).



Edit DB Terminal Values - MMI4

MMI Data Object DI :

MMI4	NAME
	OBJ_NAME
	DESCR1
	DESCR2
0	PROC_SEC
	DAT_OBJ
0	INDEX
NONE	EV_COM
1	EVS_IDNT
1	EVS_REF
0	VALUE_TR
0	NORM_POS

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	MMIx	–	Unique **NAME** of the element.	Max. 20 characters.
OBJ_NAME	user		–	**OBJ**ect **NAME** in MMI.	Max. 20 characters.
DESCR1	user		–	Object **DESCR**iption, part **1**.	Max. 20 characters.
DESCR2	user		–	Object **DESCR**iption, part **2**.	Max. 8 characters.
PROC_SEC	user	0	–	**PROC**ess **SEC**tion.	Range 0–16
DAT_OBJ	user	*	–	Reference to a **DAT**(B) **OBJ**ect which must be referenced itself by a DSP element.	–
INDEX	user	0	–	**INDEX** of boolean value in DAT(B) object.	Range 0–31
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32

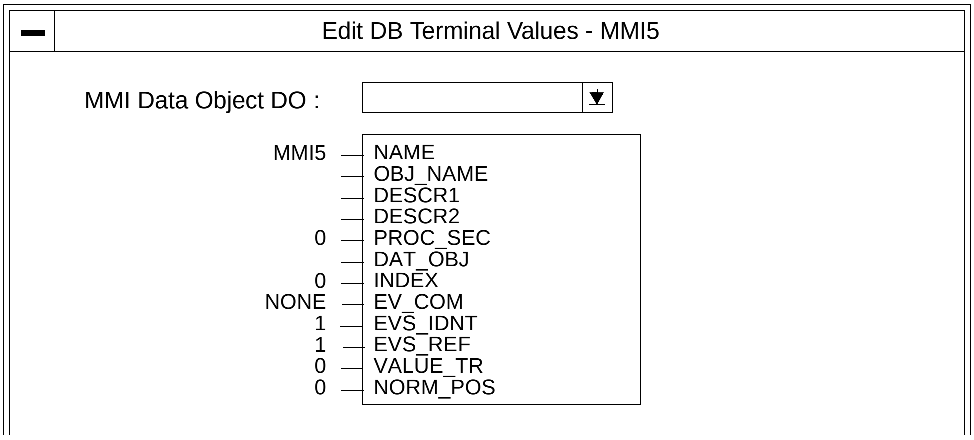
Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE_TR	user	0	–	**VALUE TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–

MMI Data Object DO DAT_DO

Summary

The DAT_DO data base element represents an Digital Output object mapped to a DAT object and possibly to an Event Channel in the MMI (for instance, SattGraph 5000).



MMI Data Object DO :

MMI5	NAME
	OBJ_NAME
	DESCR1
	DESCR2
0	PROC_SEC
	DAT_OBJ
0	INDEX
NONE	EV_COM
1	EVS_IDNT
1	EVS_REF
0	VALUE_TR
0	NORM_POS

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MMIx	–	Unique **NAME** of the element.	Max. 20 characters.
OBJ_NAME	user		–	**OBJ**ect **NAME** in MMI.	Max. 20 characters.
DESCR1	user		–	Object **DESCR**iption, part **1**.	Max. 20 characters.
DESCR2	user		–	Object **DESCR**iption, part **2**.	Max. 8 characters.
PROC_SEC	user	0	–	**PROC**ess **SEC**tion.	Range 0–16
DAT_OBJ	user	*	–	Reference to a **DAT**(B) **OBJ**ect which must be referenced itself by a DSP element.	–
INDEX	user	0	–	**INDEX** of boolean value in DAT(B) object.	Range 0–31
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32
VALUE_TR	user	0	–	**VALUE TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–

DI module DI610, DI620, DI621, DI622

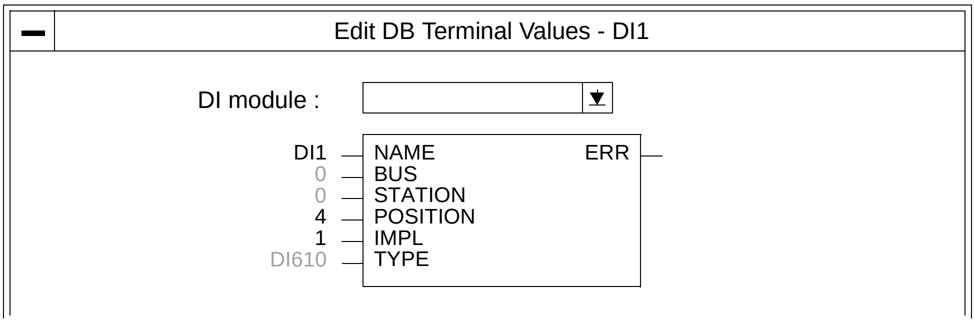
Summary

DI610/DI620/DI621/DI622 are modules for handling of digital input signals.

The Engineering Station will create:

- 1 data base element of type DI module.
- 32 data base elements of type Digital Input.

The different types (DI610/DI620/DI621 and DI622) vary in different hardware properties of the inputs (voltage, isolation,…).



Edit DB Terminal Values - DI1

DI module :

DI1 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DI610 — TYPE
ERR —

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DI610/ DI620/ DI621/ DI622	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

DI module DI635, DI636

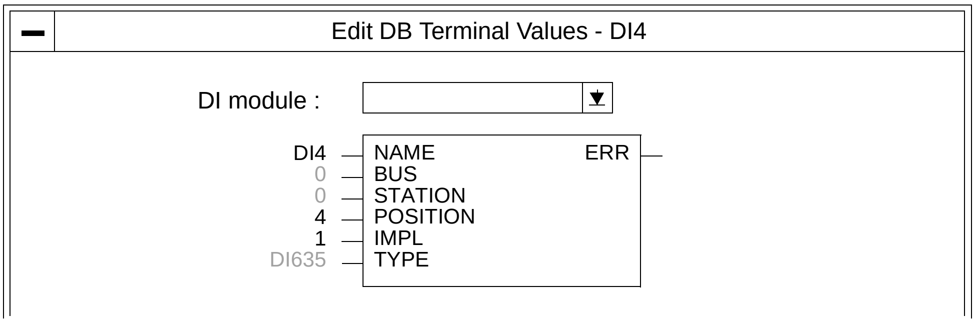
Summary

DI635/DI636 is a module for handling of digital input signals.

The Engineering Station will create:

- 1 data base element of type DI module.
- 16 data base elements of type Digital Input.

The two types (DI635 and DI636) vary in different hardware properties (voltage) of the inputs.



Edit DB Terminal Values - DI4

DI module :

DI4 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DI635 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DI635/ DI636	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

DI module DI650, DI651, DI652

Summary

The DI650/DI651/DI652 are modules for handling of digital input signals.

The Engineering Station will create:

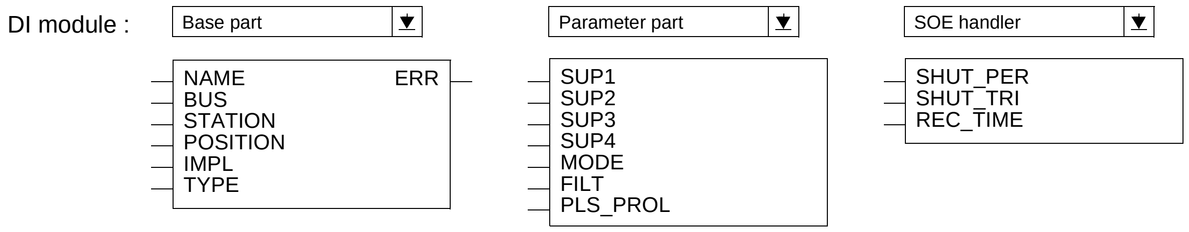
- 1 data base element of type DI module.
- 32 data base elements of type Digital Input.

The number of data base element instances of type DI module is limited to 32.

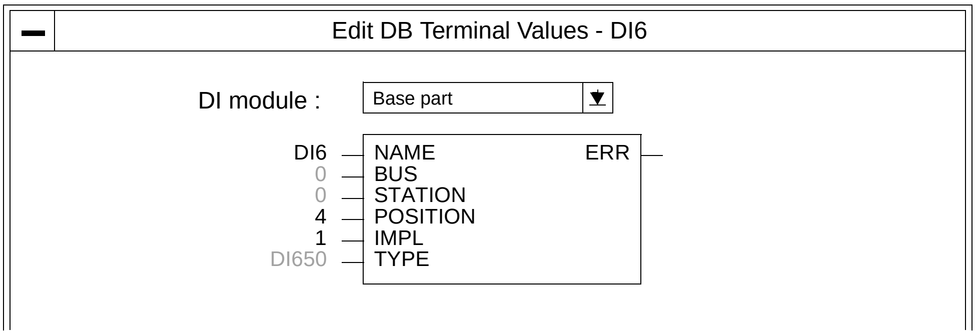
The different types (DI650, DI651, DI652) vary in different hardware properties of the inputs (voltage, isolation, …). When the module runs in SOE mode, the digital input signals are scanned for events.

Note that only a redundant pair of PM645 processor modules can share an DI650/DI651/DI652 as an SOE device, not different controllers.

Overview



Base part

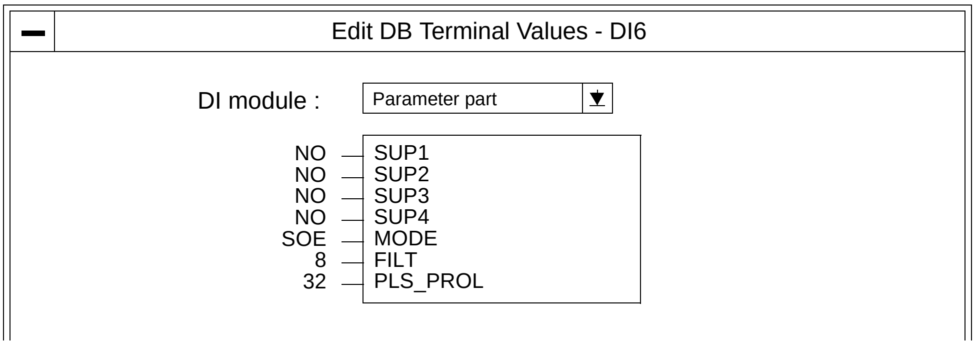


DI6 NAME
0 BUS
0 STATION
4 POSITION
1 IMPL
DI650 TYPE

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	DIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DI650/ DI651/ DI652	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

Parameter part



Edit DB Terminal Values - DI6

DI module : Parameter part

NO — SUP1
NO — SUP2
NO — SUP3
NO — SUP4
SOE — MODE
8 — FILT
32 — PLS_PROL

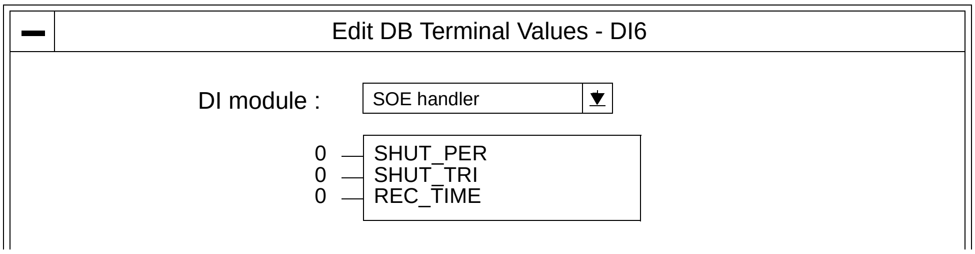
Terminal Description, Parameter part

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
SUP1	user	NO	–	Sensor voltage **SUP**ervision group **1**. Values: NO, YES	–
SUP2	user	NO	–	Sensor voltage **SUP**ervision group **2**. Values: NO, YES	–
SUP3	user	NO	–	Sensor voltage **SUP**ervision group **3**. Values: NO, YES	–

Terminal Description, Parameter part (Continued)

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
SUP4	user	NO	–	Sensor voltage **SUP**ervision group **4**. Values: NO, YES	–
MODE	user	SOE	–	Operation **MODE**. Values: DI, PC, SOE	–
FILT	user	8	–	Bounce **FILT**er in milliseconds. Values: 0, 1, 2, 4, 8, 16, 32, 64, 128, 256	Not allowed in mode SOE.
PLS_PROL	user	32	–	**P**u**LS**e **PROL**ongation in milliseconds.	Range 0–4000

SOE handler



Edit DB Terminal Values - DI6

DI module : SOE handler

0 — SHUT_PER
0 — SHUT_TRI
0 — REC_TIME

Terminal Description, SOE handler

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
SHUT_PER	user	0	–	**SHUT**ter **PER**iod in seconds.	Range 0–256
SHUT_TRI	user	0	–	**SHUT**ter **TRI**ggering. Number of events to be detected during shutter period to activate the filter.	Range 0–256
REC_TIME	user	0	–	**REC**overy **TIME** in seconds.	Range 0–65000

DI module DI685

Summary

The DI685 is a module for handling of digital input signals with channel supervision internal 48 V sensor power supply and sequence of event (SOE) functionality.

The Engineering Station will create:

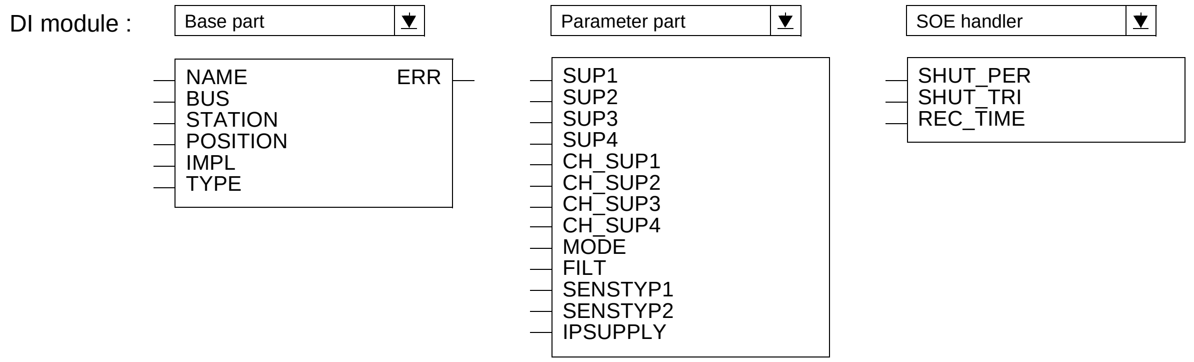
- 1 data base element of type DI module.
- 32 data base elements of type Digital Input.

The number of data base element instances of type DI module is limited to 32.

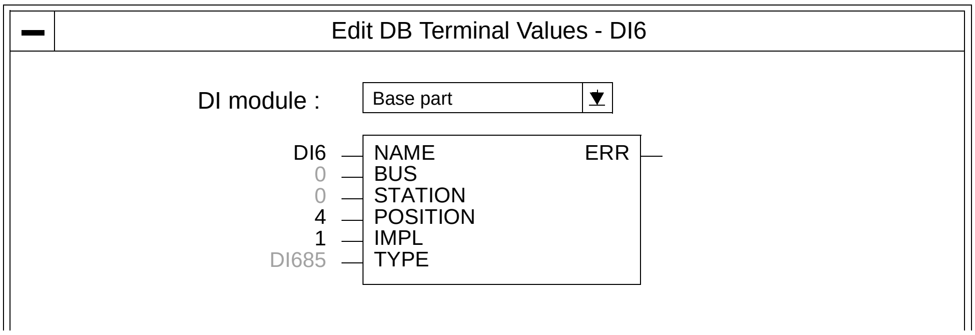
When the module runs in SOE mode, the digital input signals are scanned for events.

Note that only a redundant pair of PM645 processor modules can share an DI685 as an SOE device, not different controllers.

Overview



Base part



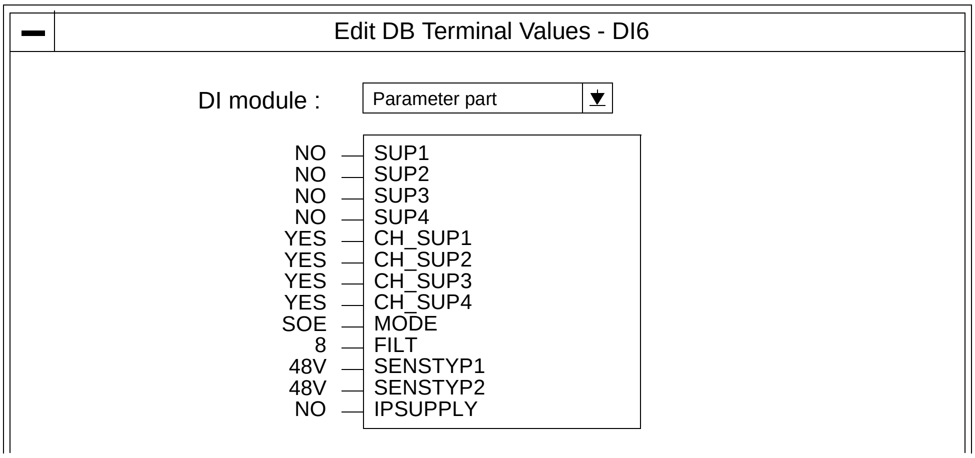
DI module : Base part

DI6 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DI685 — TYPE

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DIx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DI685	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

Parameter part



DI module : Parameter part

NO SUP1
NO SUP2
NO SUP3
NO SUP4
YES CH_SUP1
YES CH_SUP2
YES CH_SUP3
YES CH_SUP4
SOE MODE
8 FILT
48V SENSTYP1
48V SENSTYP2
NO IPSUPPLY

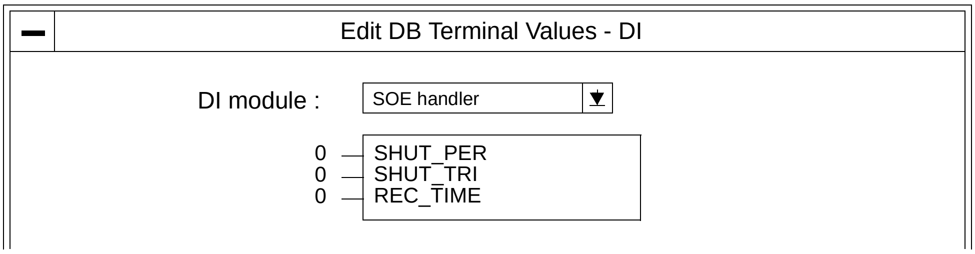
Terminal Description, Parameter part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
SUP1	user	NO	–	Sensor voltage **SUP**ervision group **1**. Values: NO, YES	–
SUP2	user	NO	–	Sensor voltage **SUP**ervision group **2**. Values: NO, YES	–

Terminal Description, Parameter part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
SUP3	user	NO	–	Sensor voltage **SUP**ervision group **3**. Values: NO, YES	–
SUP4	user	NO	–	Sensor voltage **SUP**ervision group **4**. Values: NO, YES	–
CH_SUP1	user	YES	–	**CH**annel **SUP**ervision group **1**. Values: NO, YES	–
CH_SUP2	user	YES	–	**CH**annel **SUP**ervision group **2**. Values: NO, YES	–
CH_SUP3	user	YES	–	**CH**annel **SUP**ervision group **3**. Values: NO, YES	–
CH_SUP4	user	YES	–	**CH**annel **SUP**ervision group **4**. Values: NO, YES	–
MODE	user	SOE	–	Operation **MODE**. Values: DI, SOE	–
FILT	user	8	–	Bounce **FILT**er in milliseconds. Values: 0, 1, 2, 4, 8, 16, 32, 64, 128, 256	Not allowed in mode SOE.
SENSTYP1	user	48V	–	**SENS**or **TYP** group **1/2**. Values: 48V, 24V	–
SENSTYP2	user	48V	–	**SENS**or **TYP** group **3/4**. Values: 48V, 24V	–
IPSUPPLY	user	NO	–	**I**nternal sensor **P**ower **SUPPLY**. Values: NO, YES	–

SOE handler



Edit DB Terminal Values - DI

DI module : SOE handler

0 — SHUT_PER
0 — SHUT_TRI
0 — REC_TIME

Terminal Description, SOE handler

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
SHUT_PER	user	0	–	**SHUT**ter **PER**iod in seconds.	Range 0–256
SHUT_TRI	user	0	–	**SHUT**ter **TRI**ggering. Number of events to be detected during shutter period to activate the filter.	Range 0–256
REC_TIME	user	0	–	**REC**overy **TIME** in seconds.	Range 0–65000

DI module DI81x, DI82x

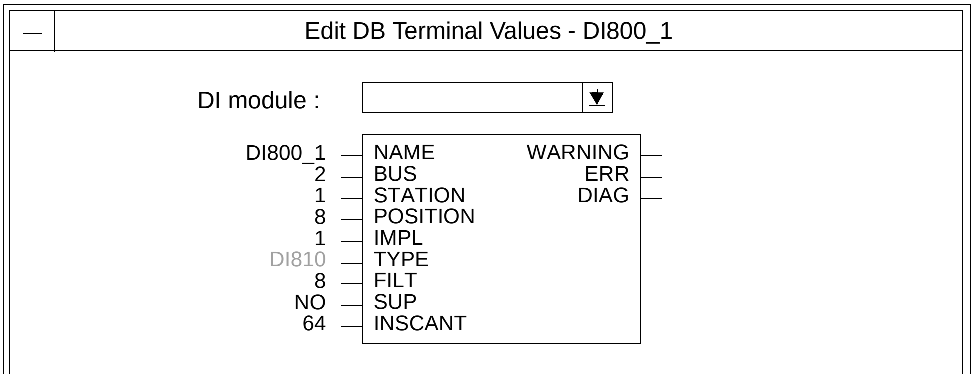
Summary

The DI module data base element specifies a Digital Input hardware module inserted in an Advant Fieldbus I/O station. The data base element is superior to the signal elements associated to the digital input channels in the module. The following Digital Input modules are supported:

- DI810: 2 × 8 channels with 24 V DC. Rated isolation voltage 50 V.
- DI811: 2 × 8 channels with 48 V DC. Rated isolation voltage 50 V.
- DI814: 1 × 16 channels with 24 V DC. Current source. Rated isolation voltage 50 V.
- DI820: 1 × 8 channels with 120 V AC. Individual isolation. Rated isolation voltage 250 V.
- DI821: 1 × 8 channels with 230 V AC. Individual isolation. Rated isolation voltage 500 V.

The Engineering Station will create:

- 1 data base element of type DI module
- 16 (DI81x) or 8 (DI82x) data base elements of type Digital Input.



Edit DB Terminal Values - DI800_1

DI module :

DI800_1 — NAME
2 — BUS
1 — STATION
8 — POSITION
1 — IMPL
DI810 — TYPE
8 — FILT
NO — SUP
64 — INSCANT

WARNING —
ERR —
DIAG —

Terminal Description

Terminal Name	Value entered by	Default value	PC con- nection data type	Description	Remarks
NAME	user	DI800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DI81x/ DI82x	–	Module **TYPE** designation. DI810, DI811or DI820, DI821	–
FILT	user	8	–	On/off delay **FILT**er time in ms. Values: 2, 4, 8 and 16.	The actual filter time may vary in the following intervals: 2–3 ms, 4–6 ms, 8–12 ms and 16–24 ms.
SUP	user	NO	–	Sensor power **SUP**ervision of channel group 1 and 2. Values: YES=enabled NO=not enabled	–
INSCANT	user	64	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

DI module DI885

Summary

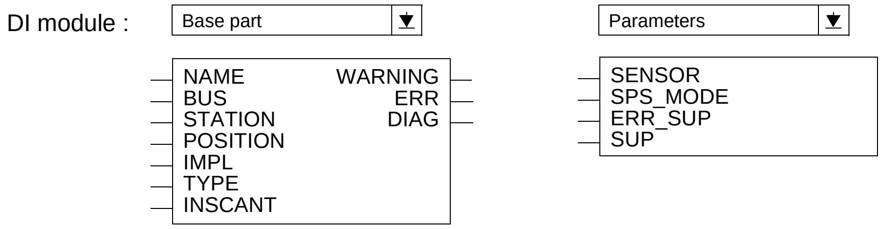
The DI module data base element specifies a Digital Input hardware module with 1×8 channels 24/48 V DC and SOE (Sequence Of Event) functionality inserted in an S800 I/O station. The data base element is superior to the signal elements associated to the digital input channels in the module. The data base element contains diagnostic information of the I/O module.

The Engineering Station will create:

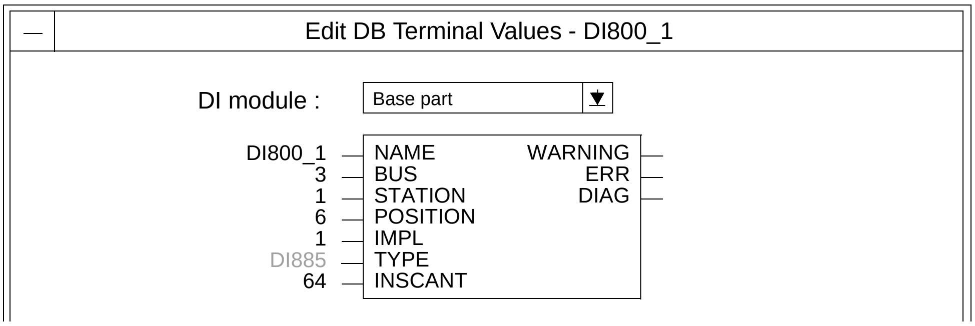
- 1 data base element of type DI module

8 data base elements of type Digital Input.

Overview



Base part



DI800_1 — NAME
3 — BUS
1 — STATION
6 — POSITION
1 — IMPL
DI885 — TYPE
64 — INSCANT

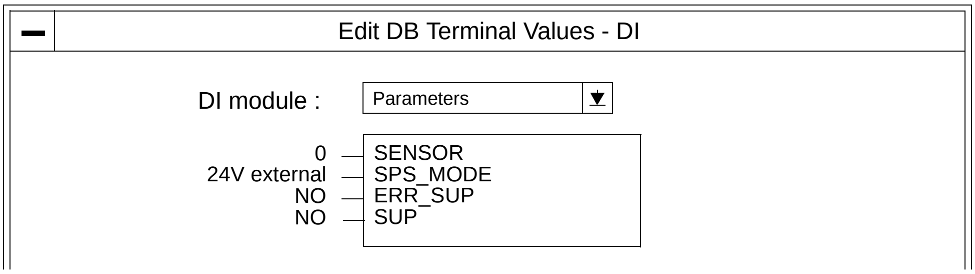
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DI800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	B(r)	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DI885	–	Module **TYPE** designation.	–
INSCANT	user	64	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Parameters



DI module : Parameters

0 — SENSOR
24V external — SPS_MODE
NO — ERR_SUP
NO — SUP

Terminal Description, Parameters

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
SENSOR	user	0	–	**SENSOR** type: 0=contact input 1=electronic input	–
SPS_MODE	user	24V external	–	**S**ensor **P**ower **S**upply **MODE**: 48V external, 24V external, 24V internal.	–

Terminal Description, Parameters (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ERR_SUP	user	NO	–	**SUP**ervision of channel **ERR**ors: YES=enabled NO=not enabled	–
SUP	user	NO	–	Sensor power **SUP**ervision: YES=enabled NO=not enabled	–

Function

DI885 contains eight 24/48 V digital input channels with SOE (Sequence of Event) functionality. The time stamp of events has a resolution of 1 millisecond.

Selection of INSCANT

The INSCANT terminal defines the cycle time to be used on Advant Fieldbus 100 to receive the input values from the I/O station to the Advant Controller 160. The selection of cycle time (INSCANT) shall be chosen with care due to bus bandwidth. The maximum load on AF 100 is 70% for (cyclic) process data transfer. For additional information about AF 100 see *Advant Fieldbus 100 User's Guide*. The following table describes the load generated by the DI module for all available cycle times:

Generated AF 100 load in percent at different cycle times on INSCANT

1ms	2ms	4ms	8ms	16ms	32ms	64ms	128ms	256ms	512ms	1024ms	2048ms	4096ms
8.800	4.400	2.200	1.100	0.550	0.275	0.138	0.069	0.034	0.017	0.009	0.004	0.002

Error Handling

The ERR terminal is set in the DI module element, if the module is determined non-functional, by the control function. Indicated errors are non-existent hardware, malfunctioning, wrong module type, software or data base errors. The ERR terminal can be connected to the PC program for desired function. ERR is reset, automatically after replacement of the faulty module.

The DIAG terminal provides for a more specific information about the I/O module diagnostics, see section "S800 I/O module DIAG terminal" in the Introduction.

Selection of sensor power supply

Selection of sensor power supply can be done by the terminal SPS_MODE. Sensor power supply can be chosen between 48V external, 24V external and 24V internal.

Selection of channel supervision

Selection of channel supervision can be done by the terminal ERR_SUP. The module can supervise the process channels regarding wire brake of sensor cable, missing sensor and short circuit of sensor voltage to ground.

Selection of sensor type

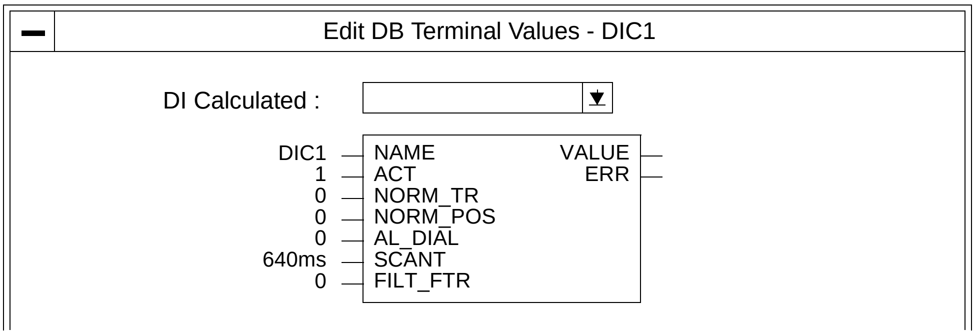
Selection of sensor type can be done by the terminal SENSOR. Sensor type can be chosen between contact input or electronic input. Channel supervision is only possible for contacts with a resistor connected in parallel.

DI Calculated DIC

Summary

The DI Calculated element is an event channel element used for detection of calculated digital events.

An event is detected when the boolean value (terminal VALUE) changes from 0 to 1 or vice versa, and event generation is deblocked (terminal NORM_TR=1). There is a filtering facility to suppress event generation in case of rapidly changing values.



Edit DB Terminal Values - DIC1

DI Calculated :

```
  DIC1 — NAME          VALUE —
     1 — ACT             ERR —
     0 — NORM_TR
     0 — NORM_POS
     0 — AL_DIAL
 640ms — SCANT
     0 — FILT_FTR
```

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DICx	–	Unique **NAME** of the event channel.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	Element must be referenced by an EVS(S) when ACT=1.
NORM_TR	user/PC	0	B(r/w)	**NORM**al **TR**eatment. 0=event detection disabled 1=event detection enabled	Not allowed to change on-line.
NORM_POS	user	0	–	**NORM**al **POS**ition for this channel.	–
AL_DIAL	user	0	–	**DIAL** the master on **AL**arm. 0= no dial on alarm 1=dial on alarm	RCOM only.
SCANT	user	640ms	–	**SCAN T**ime for event detection. Values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–

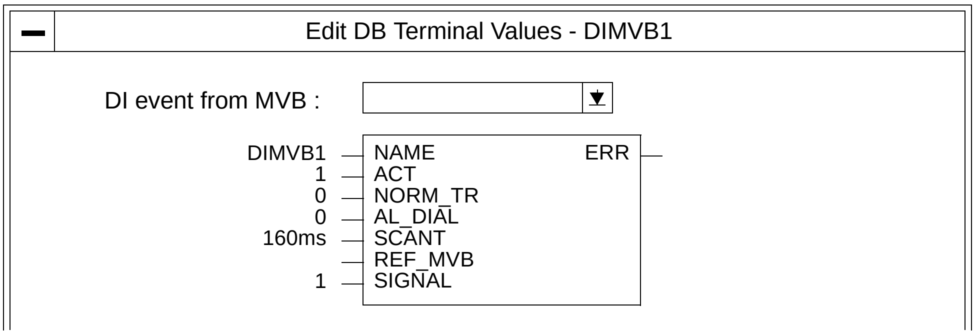
Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
FILT_FTR	user	0	–	**FILT**er time **F**ac**T**o**R**. The filter time = FILT_FTR × SCANT is the duration of a value change before the change is accepted as event.	Range 0–32
VALUE	PC	0	B(r/w)	Signal **VALUE** (is watched for events).	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–

DI event from MVB DIMVB

Summary

The element DI event from MVB extracts event data from an MVI Data Block element.



Edit DB Terminal Values - DIMVB1

DI event from MVB :

DIMVB1 — NAME ERR —
1 — ACT
0 — NORM_TR
0 — AL_DIAL
160ms — SCANT
— REF_MVB
1 — SIGNAL

Terminal Description

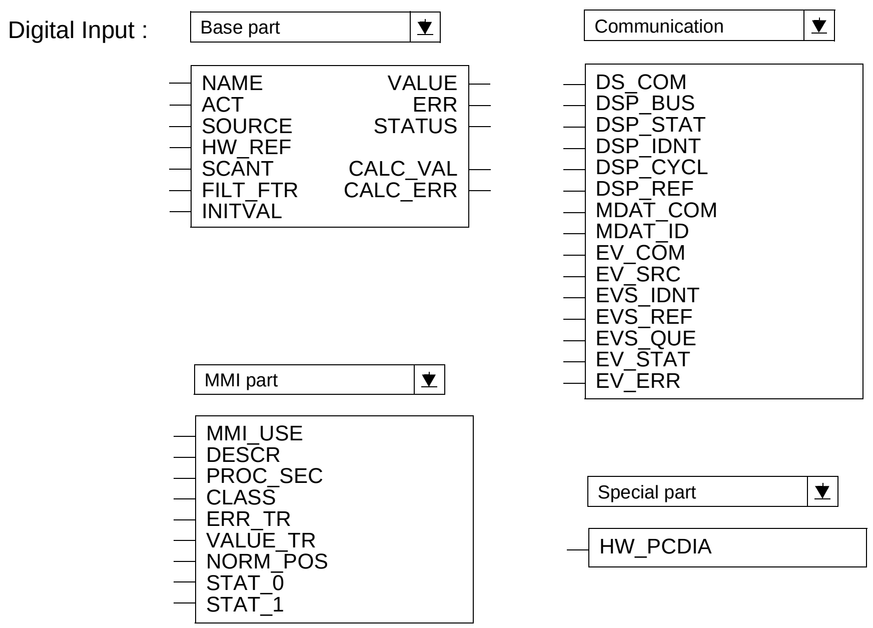
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DIMVBx	–	Unique **NAME** of the event channel.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
NORM_TR	user/PC	0	B(r/w)	**NORM**al **TR**eatment. 0=event detection disabled 1=event detection enabled	Not allowed to change on-line.
AL_DIAL	user	0	–	**DIAL** the master on **AL**arm. 0=no dial on alarm 1=dial on alarm	RCOM only.
SCANT	user	160ms	–	**SCAN T**ime for event recording. Values: 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
REF_MVB	user	*	–	**REF**erence by name to the **MV**I Data **B**lock from which event data is recorded.	–
SIGNAL	user	1	–	Number of the **SIGNAL** of which event data is recorded.	Range 1–16
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–

Digital Input DIS

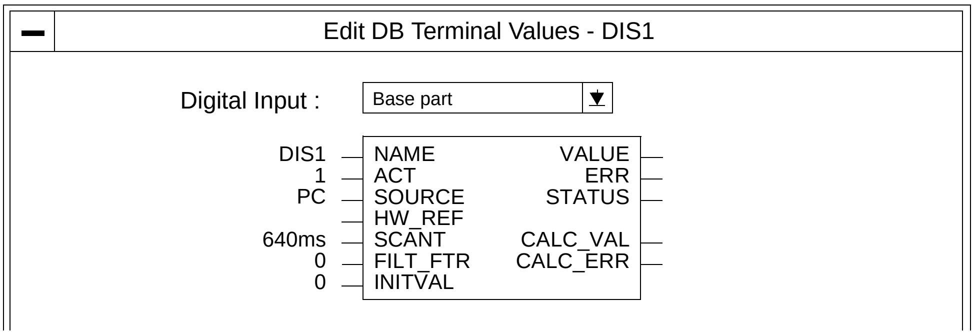
Summary

This Digital Input data base element represents an extended DI object.

Overview



Base part

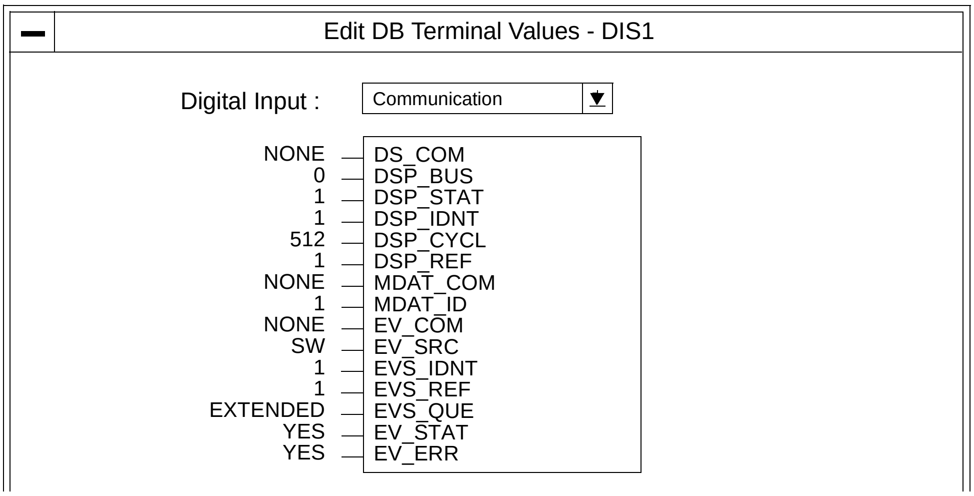


DIS1 NAME
1 ACT
PC SOURCE
HW_REF
640ms SCANT
0 FILT_FTR
0 INITVAL

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DISx	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	Element must be referenced by an EVS(S) when ACT=1.
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: HW, PC, RECEIVE, MMI.	HW: Value is fetched from a digital input signal element, terminal HW_REF points to the element. PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
HW_REF	user	*	–	**REF**erence to the **H**ard**W**are.	Used if SOURCE = HW.
SCANT	user	640ms	–	**SCAN T**ime for event recording and data acquisition. Values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
FILT_FTR	user	0	–	**FILT**er time **F**ac**T**o**R**. FILT_FTR x SCANT is the duration of a value change before the change is accepted as event.	Range 0–32
INITVAL	user	0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	B(r)	Process **VALUE**.	Read by PC program if SOURCE = PC.
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
STATUS	system	–	I(r)	**STATUS** information.	Status bits described in chapter introduction.
CALC_VAL	system	–	B(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.
CALC_ERR	system	–	B(r/w)	**CALC**ulated software **ERR**or.	Written if SOURCE = PC.

Communication


Edit DB Terminal Values - DIS1

Digital Input : Communication

NONE — DS_COM
0 — DSP_BUS
1 — DSP_STAT
1 — DSP_IDNT
512 — DSP_CYCL
1 — DSP_REF
NONE — MDAT_COM
1 — MDAT_ID
NONE — EV_COM
SW — EV_SRC
1 — EVS_IDNT
1 — EVS_REF
EXTENDED — EVS_QUE
YES — EV_STAT
YES — EV_ERR

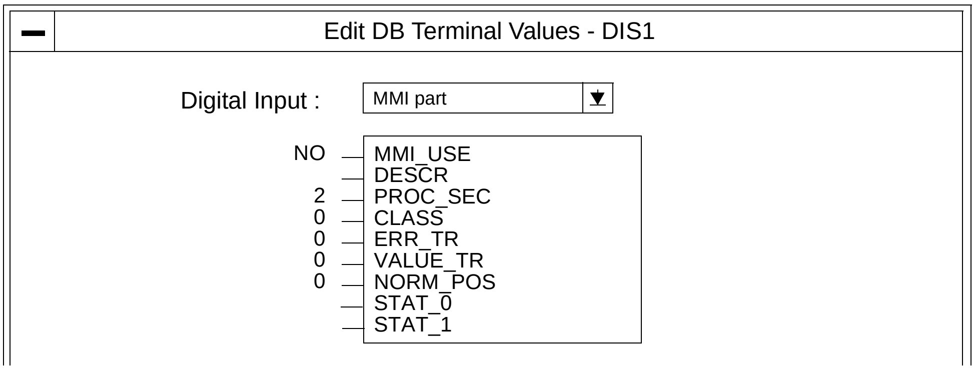
Terminal Description, Communication

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of **DAT** element within the DSP element.	Range 1–8
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.

Terminal Description, Communication (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
MDAT_ID	user	1	–	**ID**ent of corresponding **MDAT** element.	Range 1–200
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EV_SRC	user	SW	–	**S**ou**RC**e of **EV**ent **S**et element. Values: HW, SW.	HW: HW_REF must reference an SOE signal (DIS650, DIS651, DIS652).
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32
EVS_QUE	user	EXTENDED	–	Specifies the event **QUE**ue size of the **EV**ent **S**et element. Values: NORMAL (100 entries), EXTENDED (500 entries)	–
EV_STAT	user	YES	–	Generate **EV**ents for **STAT**us changes. Values: YES, NO.	Events are generated for Acknowledgement, alarm blocking and forcing.
EV_ERR	user	YES	–	Generate **EV**ents if an **ERR**or occurs. Values: YES, NO.	See chapter introduction for error conditions that generate events.

MMI part



Edit DB Terminal Values - DIS1

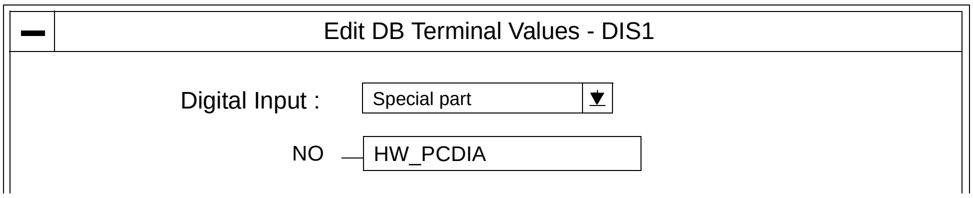
Digital Input : MMI part

NO MMI_USE
DESCR
2 PROC_SEC
0 CLASS
0 ERR_TR
0 VALUE_TR
0 NORM_POS
STAT_0
STAT_1

Terminal Description, MMI part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–
DESCR	user		–	Signal **DESCR**iption.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1 to 16
CLASS	user	0	–	**CLASS** subdivides process section. Used by status list function in Operator Station.	Range -128 to +127
ERR_TR	user	0	–	**ERR**or **TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
VALUE_TR	user	0	–	**VALUE TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–
STAT_0	user		–	Text for **STAT**us = **0**.	Max. 20 characters.
STAT_1	user		–	Text for **STAT**us = **1**.	Max. 20 characters.

Special part



Edit DB Terminal Values - DIS1

Digital Input : Special part

NO — HW_PCDIA

Terminal Description, Special part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HW_PCDIA	user	NO	–	**PC** element uses **DI**rect **A**ccess to the **H**ard**W**are. Values: NO, YES.	Used if SOURCE = HW. See chapter below.

HW_PCDIA Terminal

Terminal HW_PCDIA specifies how the value is fetched from the hardware (if terminal SOURCE = HW).

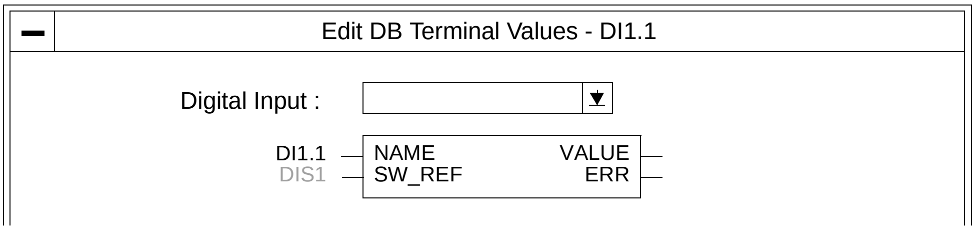
HW_PCDIA = YES:
Each consumer of the value (CONTRMs) fetches the value directly via the BIOB address from the hardware or from the PC element or from the data base element.

HW_PCDIA = NO:
The value is fetched from the DIS element and provided in terminal VALUE.

Digital Input DIS610, DIS620, DIS621, DIS622

Summary

DIS610/DIS620/DIS621/DIS622 are subordinated to DI610/DI620/DI621/DI622.



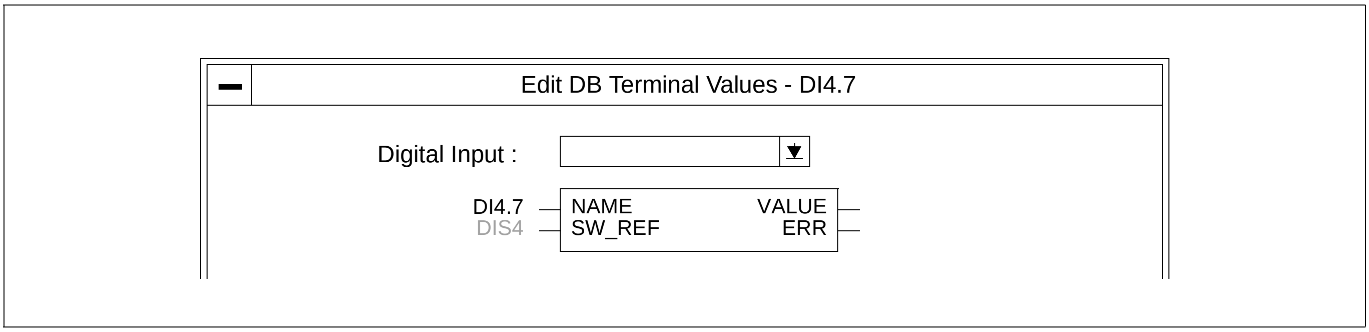
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DIS data base element.	Automatically updated when referenced by a DIS element.
VALUE	system	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Digital Input DIS635, DIS636

Summary

DIS635/ DIS636 are subordinated to DI635/ DI636.



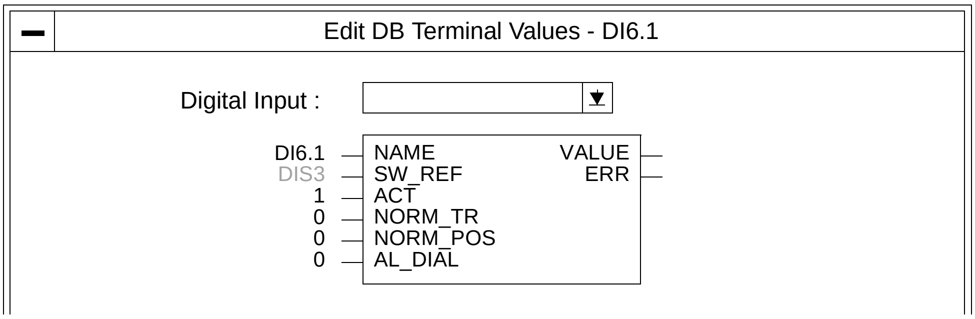
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DIS data base element.	Automatically updated when referenced by a DIS element.
VALUE	system	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Digital Input DIS650, DIS651, DIS652

Summary

DIS650/DIS651/DIS652 are subordinated to DI650/DI651/DI652.



```
DI6.1 — NAME          VALUE —
DIS3  — SW_REF          ERR —
1     — ACT
0     — NORM_TR
0     — NORM_POS
0     — AL_DIAL
```

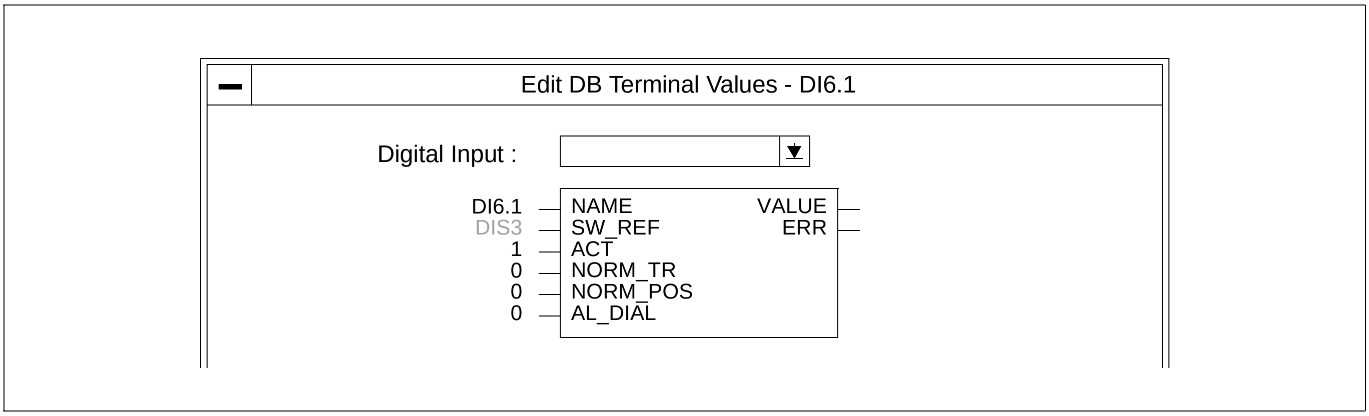
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	DIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DIS data base element.	Automatically updated when referenced by a DIS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
NORM_TR	user	0	–	**NORM**al **TR**eatment. 0=disabled 1=enabled	SOE recording.
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–
AL_DIAL	user	0	–	**DIAL** on **AL**arm. 0=disabled 1=enabled	RCOM only.
VALUE	system	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Digital Input DIS685

Summary

DIS685 is subordinated to DI685.



Edit DB Terminal Values - DI6.1

Digital Input :

DI6.1 — NAME
DIS3 — SW_REF
1 — ACT
0 — NORM_TR
0 — NORM_POS
0 — AL_DIAL
VALUE —
ERR —

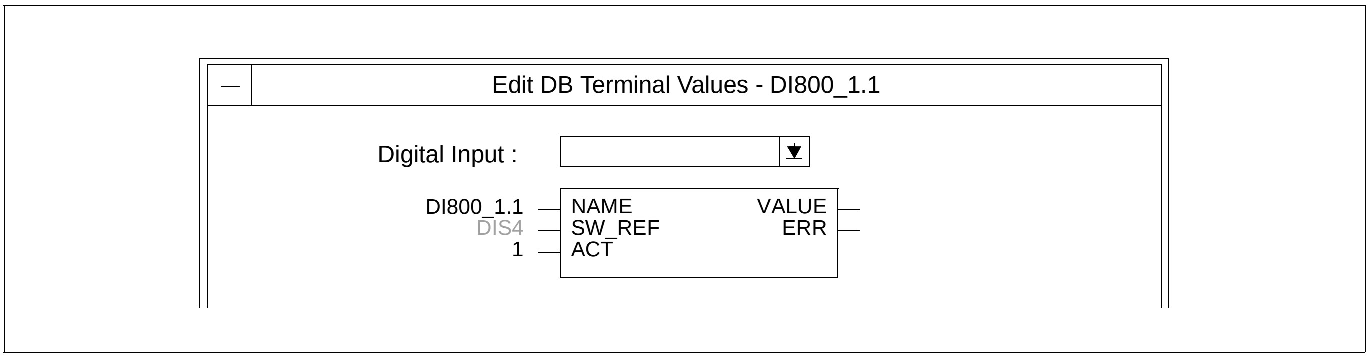
Terminal Description

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	DIx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DIS data base element.	Automatically updated when referenced by a DIS element.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
NORM_TR	user	0	–	**NORM**al **TR**eatment. 0=disabled 1=enabled	SOE recording.
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–
AL_DIAL	user	0	–	**DIAL** on **AL**arm. 0=disabled 1=enabled	RCOM only.
VALUE	system	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration erro**r**	–

Digital Input DIS81x, DIS82x

Summary

The data base element Digital Input is subordinate to the DI module data base element specifying an DI81x or DI82x hardware module.



Edit DB Terminal Values - DI800_1.1

Digital Input :

DI800_1.1 — NAME
DIS4 — SW_REF
1 — ACT
VALUE —
ERR —

Terminal Description

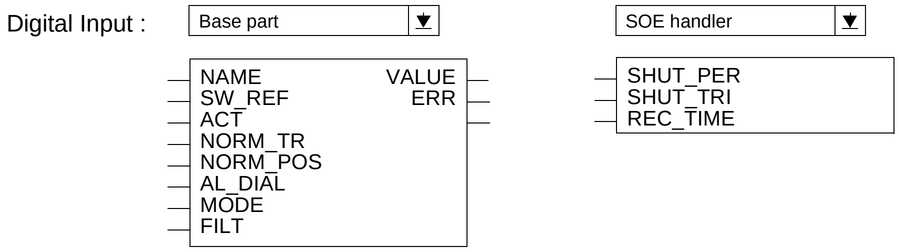
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DI800_ x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DIS data base element.	Automatically updated when referenced by a DIS element.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
VALUE	system	–	B(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

Digital Input DIS885

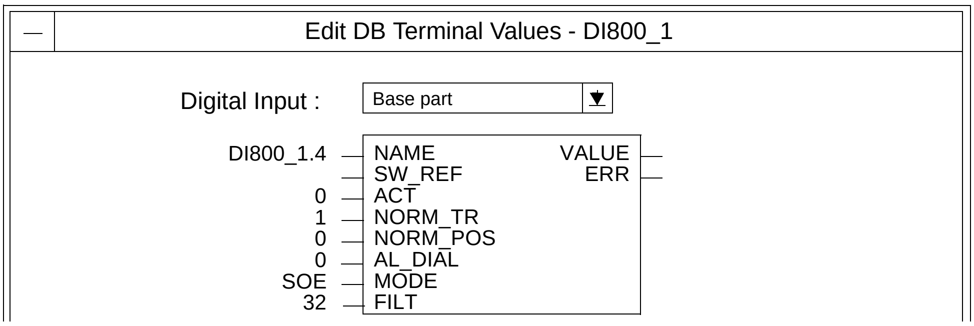
Summary

The data base element Digital Input is subordinate to the DI module data base element specifying an DI8885 hardware module.

Overview



Base part



DI800_1.4 — NAME
— SW_REF
0 — ACT
1 — NORM_TR
0 — NORM_POS
0 — AL_DIAL
SOE — MODE
32 — FILT

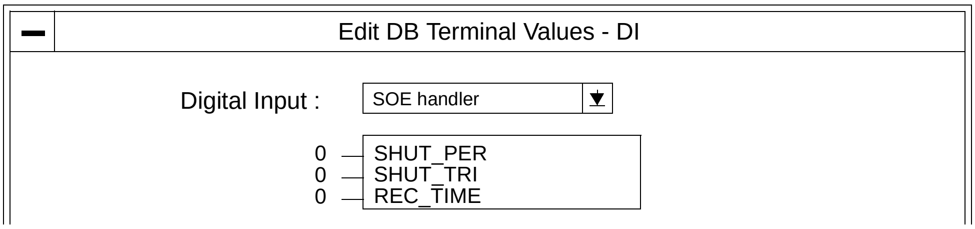
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	DI800_ x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DIS data base element.	Automatically updated when referenced by a DIS element.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NORM_TR	user	1	–	**NORM**al **TR**eatment. 0=disabled 1=enabled	SOE recording.
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–
AL_DIAL	user	0	–	**DIAL** on **AL**arm. 0=disabled 1=enabled	RCOM only.
MODE	user	SOE	–	Operation **MODE**: DI=sequence of events is not enabled SOE=sequence of events is enabled	–
FILT	user	32	–	On/off delay **FILT**er time in ms: 2 ms, 4, 8 and 16. The signal delay time may vary in the following intervals: **2**–3 ms, **4**–6 ms, **8**–12 ms and **16**–24 ms.	–
VALUE	system	–	B(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

Parameters


Edit DB Terminal Values - DI

Digital Input : SOE handler

0 — SHUT_PER
0 — SHUT_TRI
0 — REC_TIME

Terminal Description, SOE handler

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
SHUT_PER	user	0	–	**SHUT**ter **PER**iod in seconds.	Range 0–255
SHUT_TRI	user	0	–	**SHUT**ter **TRI**ggering. Number of events to be detected during shutter period to activate the filter.	Range 0–255
REC_TIME	user	0	–	**REC**overy **TIME** in seconds.	Range 0–65535

DO module DO610, DO620

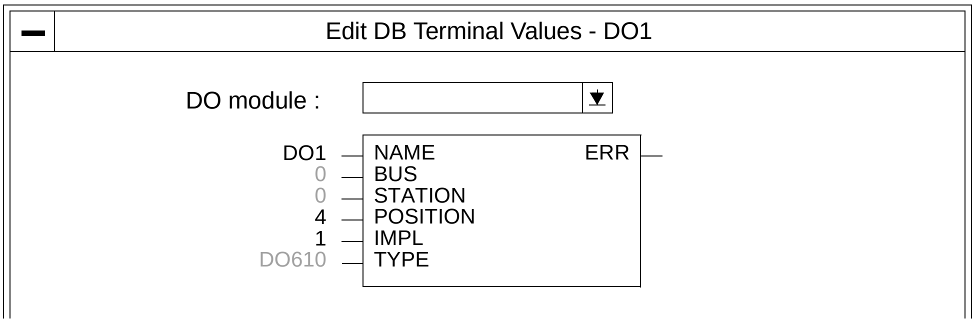
Summary

DO610 and DO620 are modules for handling of digital output signals.

The Engineering Station will create:

- 1 data base element of type DO module.
- 32 data base elements of type Digital Output.

The different types (DO610 and DO620) vary in different hardware properties of the outputs (voltage, current, isolation, …).



Edit DB Terminal Values - DO1

DO module :

DO1 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DO610 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	DOx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DO610/ DO620	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

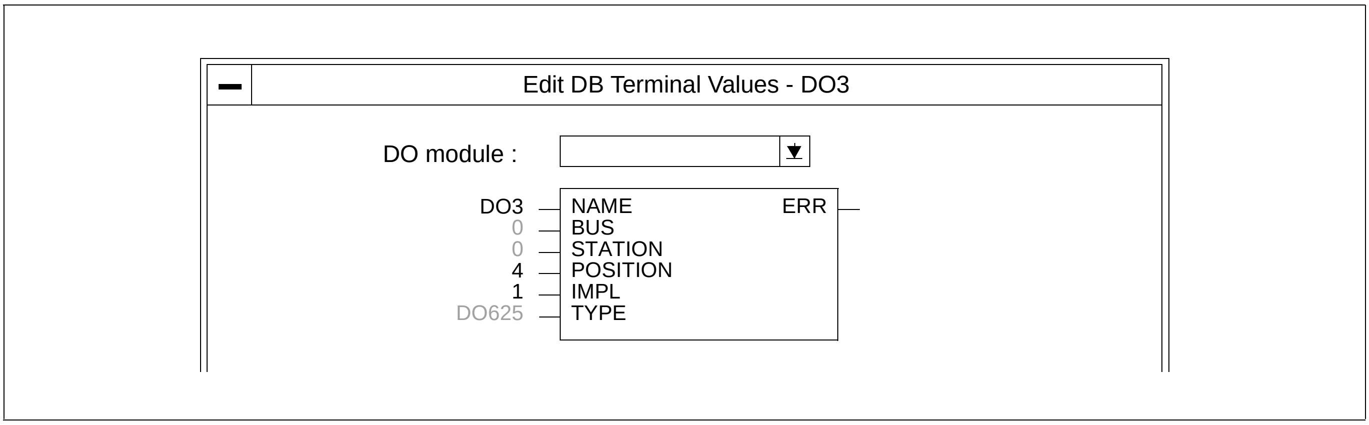
DO module DO625

Summary

DO625 is a module for handling of digital output signals.

The Engineering Station will create:

- 1 data base element of type DO module.
- 16 data base elements of type Digital Output.



Edit DB Terminal Values - DO3

DO module :

DO3 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DO625 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DO625	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

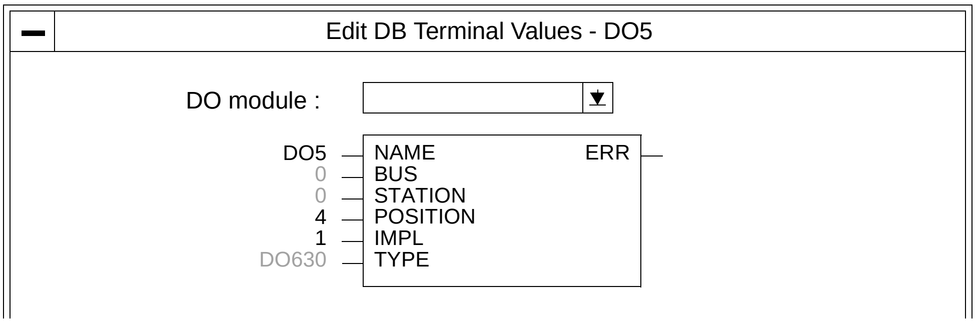
DO module DO630

Summary

DO630 is a module for handling of digital output signals.

The Engineering Station will create:

- 1 data base element of type DO module.
- 16 data base elements of type Digital Output.


Edit DB Terminal Values - DO5

DO module :

DO5 — NAME ERR —
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DO630 — TYPE

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DO630	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

DO module DO81x, DO82x

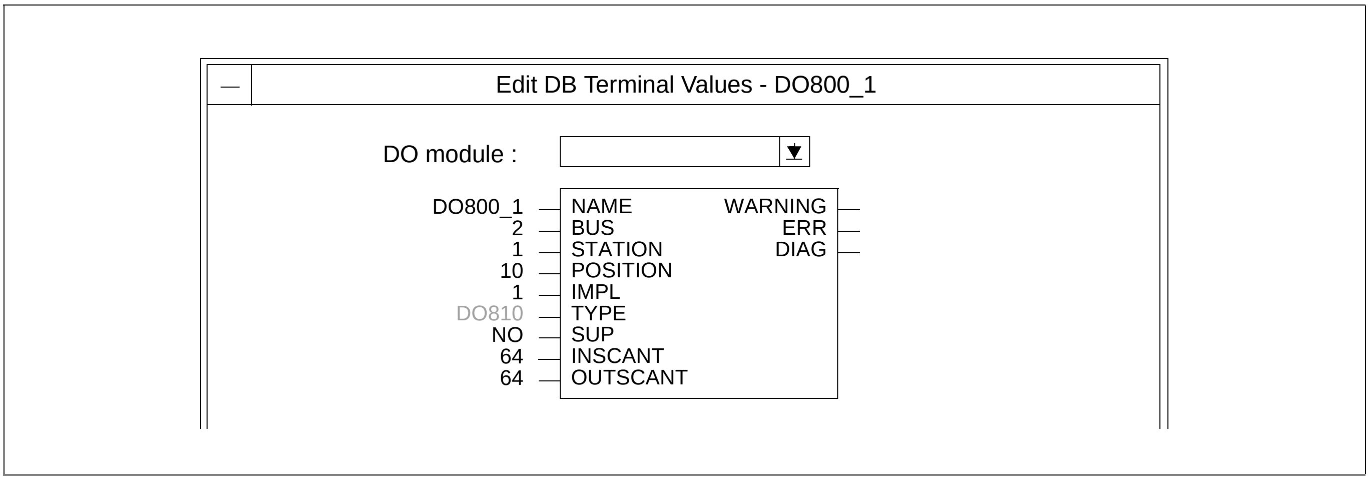
Summary

The DO module data base element specifies an Digital Output hardware module inserted in an Advant Fieldbus I/O station. The data base element is superior to the signal elements associated to the digital output channels in the module. The following modules are supported:

- DO810: 2 × 8 channels with 24 V DC, 0.5 A short circuit proof. Rated isolation voltage 50 V.
- DO811: 2 × 8 channels with 48 V DC. Rated isolation voltage 50 V.
- DO814: 2 × 8 channels with 24 V DC, 0.5 A short circuit proof. Current sink.
- DO815: 1 × 8 channels with 24 V, 2 A solid state and short circuit proof signal.
- DO820: 1 × 8 channel relay output, 24–230 V AC, 3 A. Rated isolation voltage 250 V.
- DO821: 1 × 8 channels with normally closed contacts.

By means of the call name an Engineering Station will create:

- 1 data base element of type DO module
- 16 (DO810, DO814) or 8 (DO815, DO820, DO821) data base elements of type Digital Output.



Edit DB Terminal Values - DO800_1

DO module :

DO800_1 — NAME
2 — BUS
1 — STATION
10 — POSITION
1 — IMPL
DO810 — TYPE
NO — SUP
64 — INSCANT
64 — OUTSCANT

WARNING —
ERR —
DIAG —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DO800_x	–	Unique **NAME** of the I/O module.	Max. 20 characters.

Terminal Description (Continued)

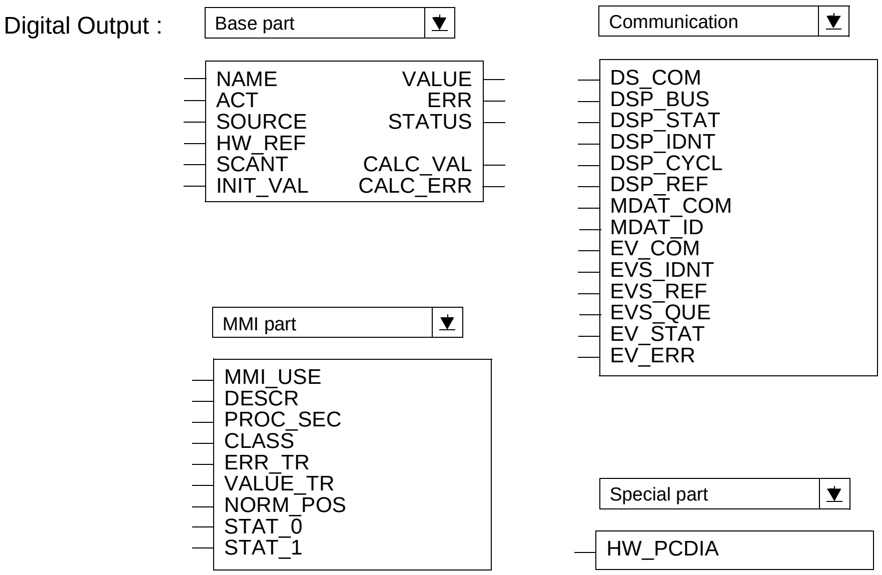
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DO810	–	Module **TYPE** designation: DO810 or DO820	–
SUP	user	NO	–	Sensor power **SUP**ervision of channel group 1 and 2. Values: YES=enabled NO=not enabled	–
INSCANT	user	64	–	**SCAN**ner cycle time on AF 100 for **IN**coming values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
OUTSCANT	user	64	–	**SCAN**ner cycle time on AF 100 for **OUT**going values. Allowed values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Digital Output DOS

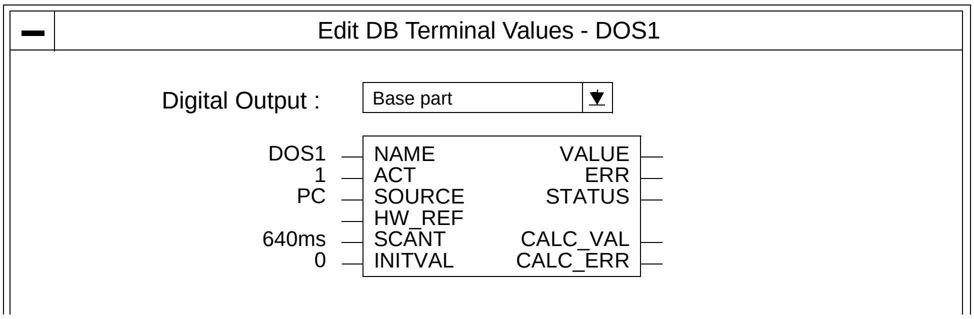
Summary

This Digital Output data base element represents an extended DO object.

Overview



Base part


Edit DB Terminal Values - DOS1

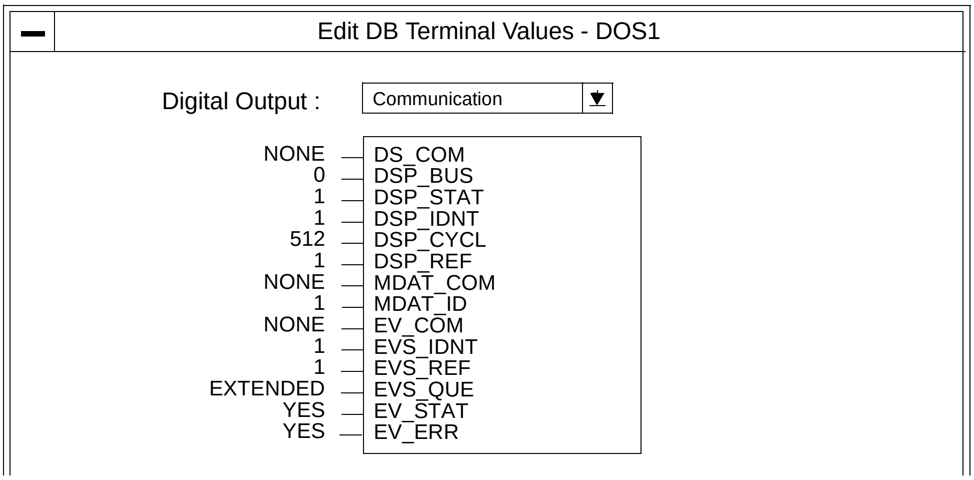
Digital Output : Base part

DOS1 — NAME
1 — ACT
PC — SOURCE
— HW_REF
640ms — SCANT
0 — INITVAL

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DOSx	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	Element must be referenced by an EVS(S) when ACT=1.
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: HW, PC, RECEIVE, MMI.	HW: Value is fetched from a digital output signal element, terminal HW_REF points to the element. PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
HW_REF	user	*	–	**REF**erence to the **H**ard**W**are.	Used if SOURCE = HW.
SCANT	user	640ms	–	**SCAN T**ime for event recording. Values: 10 ms, 20 ms, 40 ms, 80 ms, 160 ms, 320 ms, 640 ms, 1280 ms, 2560 ms, 5120 ms, 10240 ms, 20480 ms, 40960 ms, 81920 ms, 163840 ms, 327680 ms	–
INIT_VAL	user	0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
STATUS	system	–	I(r)	**STATUS** information.	Status bits described in chapter introduction.
CALC_VAL	system	–	B(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.
CALC_ERR	system	–	B(r/w)	**CALC**ulated software **ERR**or.	Written if SOURCE = PC.

Communication



Edit DB Terminal Values - DOS1

Digital Output : Communication

NONE — DS_COM
0 — DSP_BUS
1 — DSP_STAT
1 — DSP_IDNT
512 — DSP_CYCL
1 — DSP_REF
NONE — MDAT_COM
1 — MDAT_ID
NONE — EV_COM
1 — EVS_IDNT
1 — EVS_REF
EXTENDED — EVS_QUE
YES — EV_STAT
YES — EV_ERR

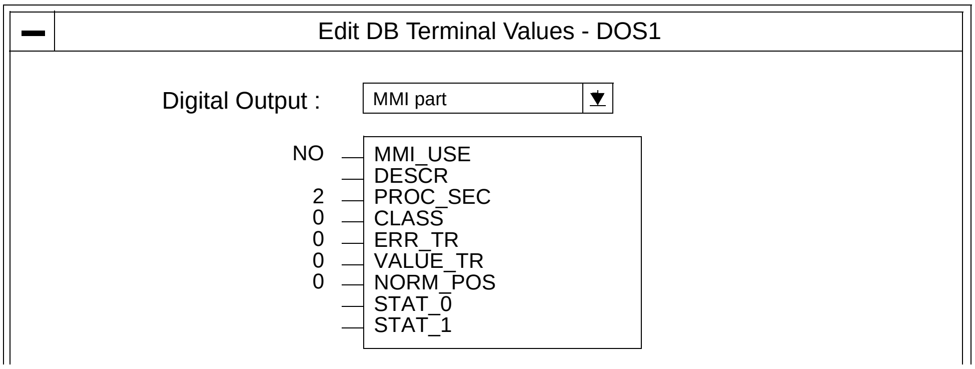
Terminal Description, Communication

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of **DAT** element within the DSP element.	Range 1–8
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.

Terminal Description, Communication (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
MDAT_ID	user	1	–	**ID**ent of corresponding **MDAT** element.	Range 1–200
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32
EVS_QUE	user	EXTENDED	–	Specifies the event **QUE**ue size of the **EV**ent **S**et element. Values: NORMAL (100 entries), EXTENDED (500 entries).	–
EV_STAT	user	YES	–	Generate **EV**ents for **STAT**us changes. Values: YES, NO.	Events are generated for Acknowledgement, alarm blocking and forcing.
EV_ERR	user	YES	–	Generate **EV**ents if an **ERR**or occurs. Values: YES, NO.	See chapter introduction for error conditions that generate events.

MMI part



Edit DB Terminal Values - DOS1

Digital Output : MMI part

NO — MMI_USE
— DESCR
2 — PROC_SEC
0 — CLASS
0 — ERR_TR
0 — VALUE_TR
0 — NORM_POS
— STAT_0
— STAT_1

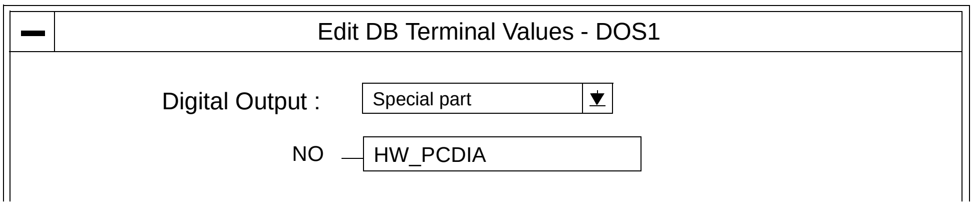
Terminal Description, MMI part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–
DESCR	user		–	Signal **DESCR**iption.	–

Terminal Description, MMI part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. –1: Value cannot be selected and presented in lists.	Range -1 to 16
CLASS	user	0	–	**CLASS** subdivides process section. Used by status list function in Operator Station.	Range -128 to +127
ERR_TR	user	0	–	**ERR**or **TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
VALUE_TR	user	0	–	**VALUE TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–
STAT_0	user		–	Text for **STAT**us = **0**.	Max. 20 characters.
STAT_1	user		–	Text for **STAT**us = **1**.	Max. 20 characters.

Special part



Edit DB Terminal Values - DOS1

Digital Output : Special part

NO — HW_PCDIA

Terminal Description, Special part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
HW_PCDIA	user	NO	–	**PC** element uses **DI**rect **A**ccess to the **H**ard**W**are. Values: NO, YES.	Used if SOURCE = HW. See chapter below.

HW_PCDIA Terminal

Terminal HW_PCDIA specifies how the value is fetched from the hardware (if terminal SOURCE = HW).

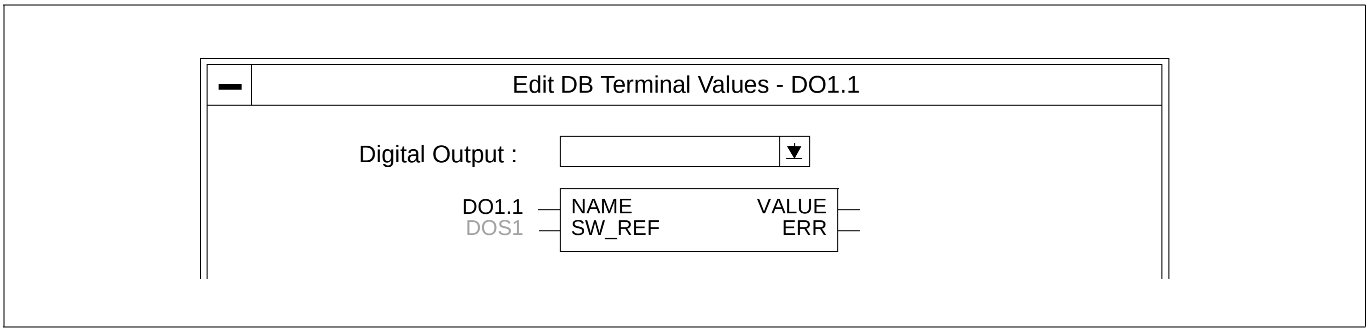
HW_PCDIA = YES:
Each consumer of the value (CONTRMs) fetches the value directly via the BIOB address from the hardware or from the PC element or from the data base element.

HW_PCDIA = NO:
The value is fetched from the DOS element and provided in terminal VALUE.

Digital Output DOS610, DOS620

Summary

DOS610 is subordinate to DO610, DOS620 to DO620.



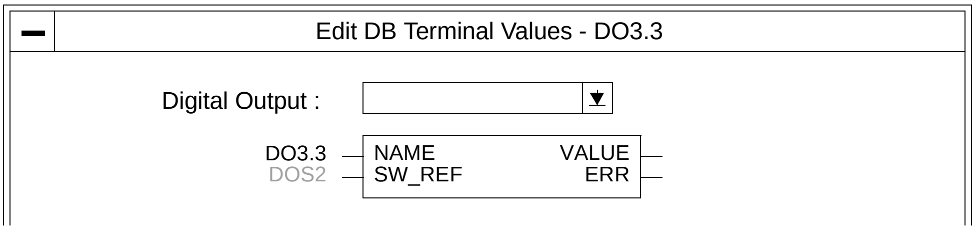
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to a DOS data base element.	Automatically updated when referenced by a DOS element.
VALUE	system	–	B(r/w)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Digital Output DOS625

Summary

DOS625 is subordinated to DO625.



Edit DB Terminal Values - DO3.3

Digital Output :

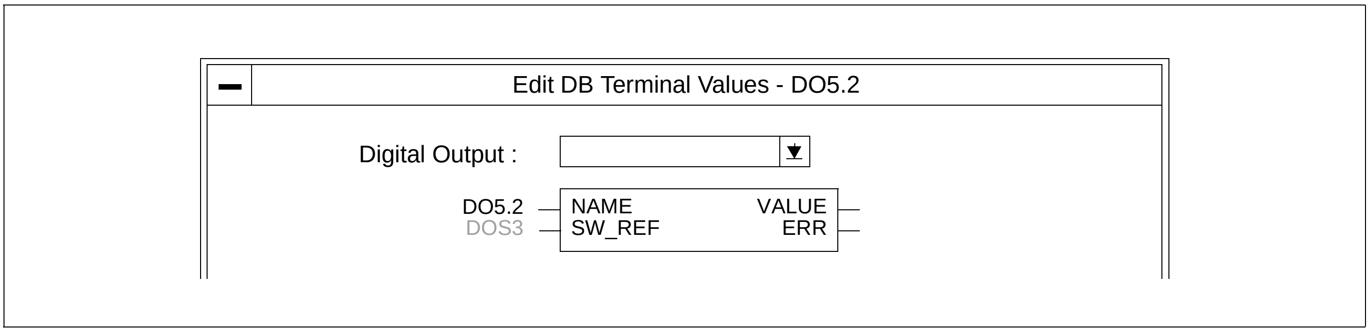
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to a DOS data base element.	Automatically updated when referenced by a DOS element.
VALUE	system	–	B(r/w)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Digital Output DOS630

Summary

DOS630 is subordinated to DO630.



Edit DB Terminal Values - DO5.2

Digital Output :

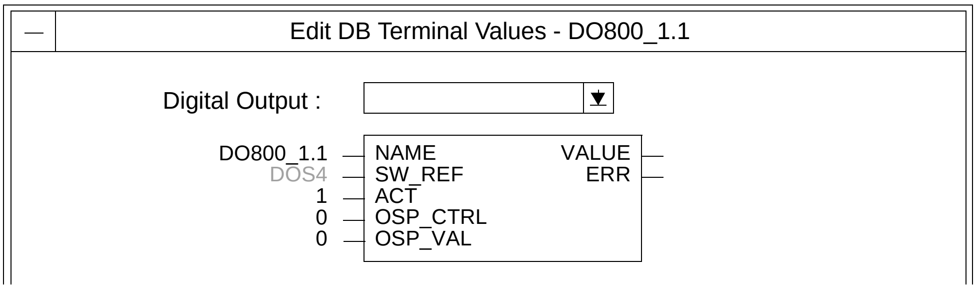
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOx.y	–	Unique signal **NAME**.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DOS data base element.	Automatically updated when referenced by a DOS element.
VALUE	system	–	B(r/w)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error	–

Digital Output DOS81x, DOS82x

Summary

The data base element Digital Output is subordinate to the data base element specifying an DO81x or DO82x hardware module.



Edit DB Terminal Values - DO800_1.1

Digital Output :

DO800_1.1 — NAME
DOS4 — SW_REF
1 — ACT
0 — OSP_CTRL
0 — OSP_VAL
VALUE —
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DO800_ x.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an DOS data base element.	Automatically updated when referenced by a DOS element.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
OSP_CTRL	user	0	–	**O**utputs **S**et as **P**redetermined: 0=keep current value 1=set to OSP_VAL	–
OSP_VAL	user	0	–	**OSP VAL**ue to set if OSP_CTRL is set to 1.	–
VALUE	system	–	B(r/w)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–

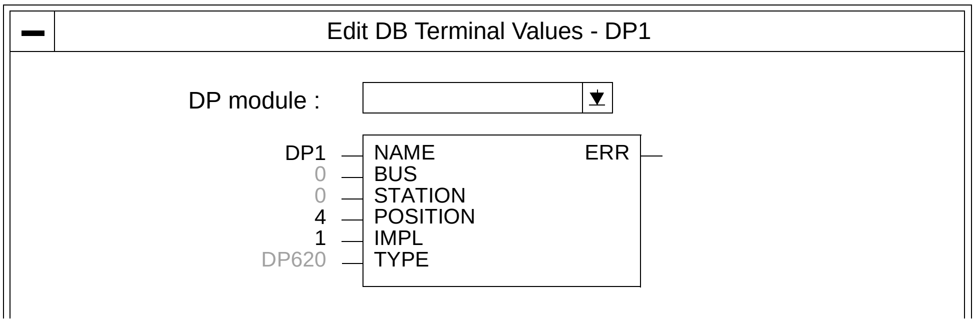
DP module DP620

Summary

DP620 is a standard pulse counter module.

By means of the call name DP620 the Engineering Station will create:

- 1 data base element of type DP module.
- 5 data base elements of type Pulse.



Edit DB Terminal Values - DP1

DP module :

```
    DP1 — NAME         ERR —
      0 — BUS
      0 — STATION
      4 — POSITION
      1 — IMPL
  DP620 — TYPE
```

Terminal Description

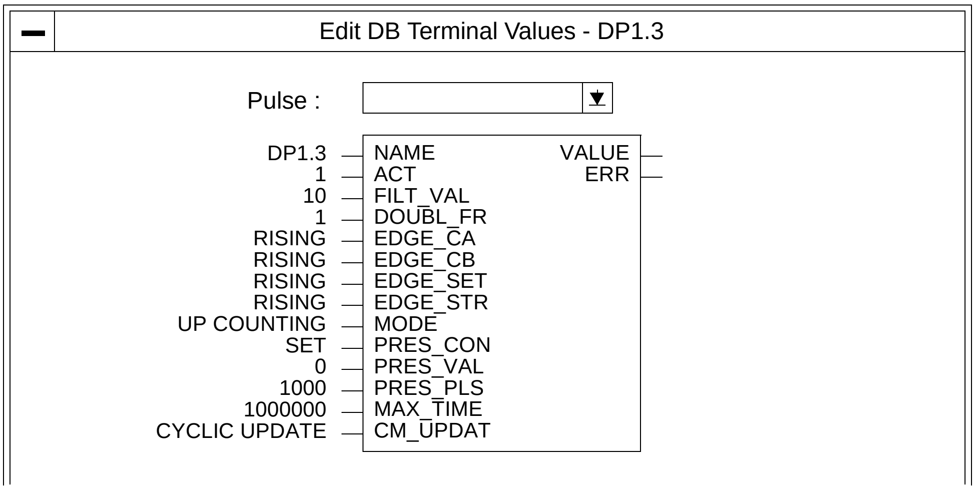
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DPx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DP620	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

Pulse

DPS620

Summary

DPS620 is subordinated to DP620.



Edit DB Terminal Values - DP1.3

Pulse :

DP1.3	NAME	VALUE
1	ACT	ERR
10	FILT_VAL	
1	DOUBL_FR	
RISING	EDGE_CA	
RISING	EDGE_CB	
RISING	EDGE_SET	
RISING	EDGE_STR	
UP COUNTING	MODE	
SET	PRES_CON	
0	PRES_VAL	
1000	PRES_PLS	
1000000	MAX_TIME	
CYCLIC UPDATE	CM_UPDAT	

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DPx.y	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
FILT_VAL	user	10	–	Time constant (**VAL**ue) of dialog **FILT**er in µs.	–
DOUBL_FR	user	1	–	**DOUBL**e **FR**equency. 0=off 1=on	–
EDGE_CA	user	RISING	–	**EDGE** of **CA**. Values: FALLING, RISING	–
EDGE_CB	user	RISING	–	**EDGE** of **CB**. Values: FALLING, RISING	–
EDGE_SET	user	RISING	–	**EDGE** of **SET**. Values: FALLING, RISING	–

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EDGE_STR	user	RISING	–	**EDGE** of **STR**obe. Values: FALLING, RISING	–
MODE	user	UP CO…	–	**MODE** of operation. Values: UP COUNTING, UP/DOWN COUNTING, FREQUENCY, DIFFERENCE, POSITION, ROTATION	–
PRES_CON	user	SET	–	**PRES**et **CON**dition. Values: SET, STROBE, SET STROBE, SET STROBE UP, SET STROBE DOWN, SET UP, SET DOWN, SET NEG, SET NEG UP, SET NEG DOWN	–
PRES_VAL	user	0	–	**PRES**et **VAL**ue.	–
PRES_PLS	user	1000	–	**PRES**et **P**u**LS**es.	–
MAX_TIME	user	1000000	–	**MAX**imum measurement period in µs.	≥3
CM_UPDAT	user	CYCL…	–	Dynamic **UPDAT**e in **CM**. Values: CYCLIC UPDATE, SET TRIGGERED	–
VALUE	system	–	IL(r)	Process **VALUE**.	Range depending on MODE.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or frequency out of range	–

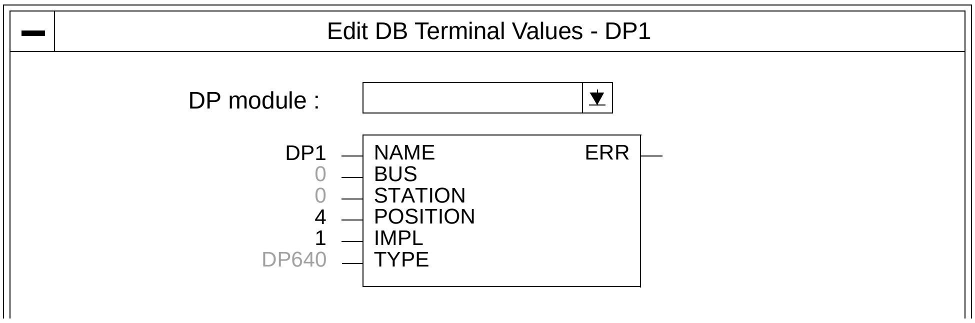
DP module DP640

Summary

DP640 is a module for rotational speed measurement.

The Engineering Station will create:

- 1 data base element of type DP module.
- 2 data base elements of type Rotational Speed.



Edit DB Terminal Values - DP1

DP module :

DP1 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DP640 — TYPE
ERR —

Terminal Description

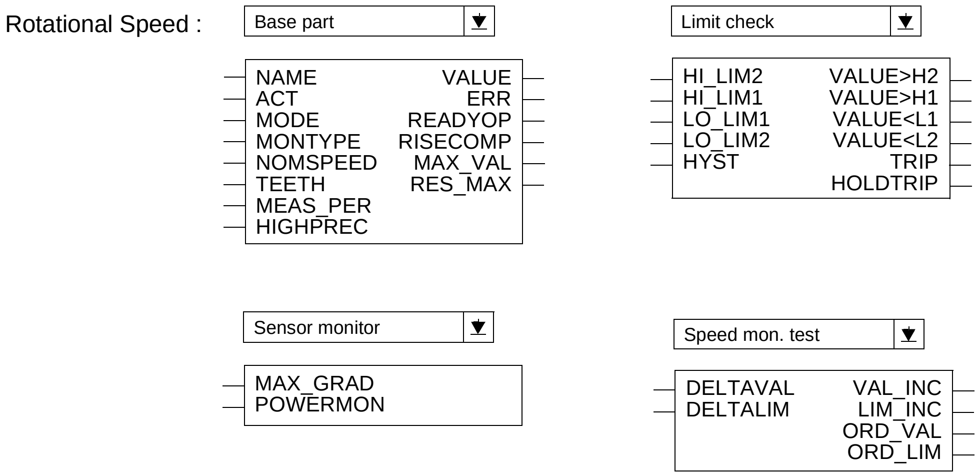
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DPx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section in Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	DP640	–	Module **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

Rotational Speed **DPS640**

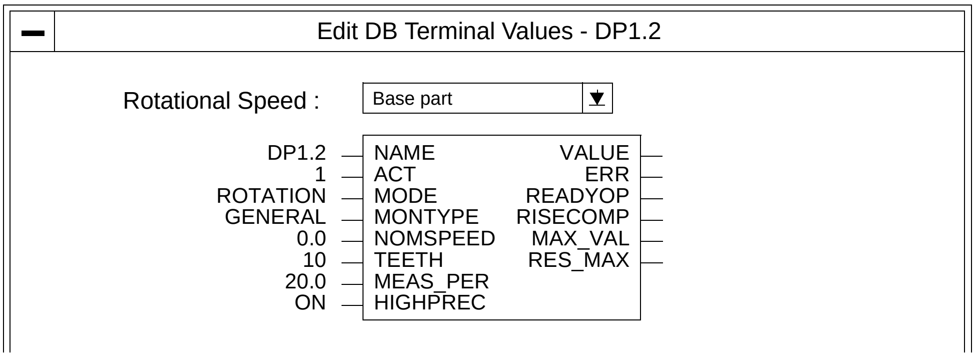
Summary

DPS640 is subordinated to DP640 and represents a rotational speed meter signal.

Overview



Base part



Edit DB Terminal Values - DP1.2

Rotational Speed : Base part

DP1.2	NAME	VALUE
1	ACT	ERR
ROTATION	MODE	READYOP
GENERAL	MONTYPE	RISECOMP
0.0	NOMSPEED	MAX_VAL
10	TEETH	RES_MAX
20.0	MEAS_PER	
ON	HIGHPREC	

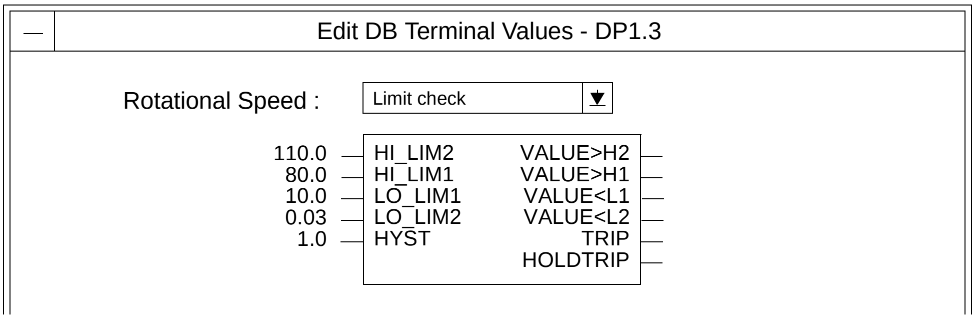
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DPx.y	–	Unique signal **NAME**.	Max. 20 characters.

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
MODE	user	ROTATION	–	**MODE** of operation. Value: ROTATION.	–
MONTYPE	user	GENERAL	–	**MON**itoring **TYPE**. Values: GENERAL, UA379, UT386.	–
NOMSPEED	user	0.0	–	**NOM**inal **SPEED** in rpm.	Range 0.0–10000.0
TEETH	user	10	–	Number of **TEETH** on wheel.	Range 1–255
MEAS_PER	user	20.0	–	Nominal **MEAS**urement **PER**iod in milliseconds.	Range 1.0–100.0
HIGHPREC	user	ON	–	**HIGH PREC**ision measurement during one whole revolution. Values: OFF, ON.	–
VALUE	system	–	R(r)	Actual speed **VALUE** in percent of nominal speed.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=module or sensor fault	–
READYOP	system	–	B(r)	1=Sensor and module are in normal, **READY OP**erating condition.	–
RISECOMP	system	–	B(r)	**COMP**lementary signal at a **RIS**ing edge of the primary signal.	Evaluated for direction detection.
MAX_VAL	system	–	R(r)	**MAX** speed **VAL**ue after the last value reset.	–
RES_MAX	system	–	B(r/w)	1=**RES**et registered **MAX**. speed value to 0% 0=new maximum value will be stored	–

Limit check



Edit DB Terminal Values - DP1.3

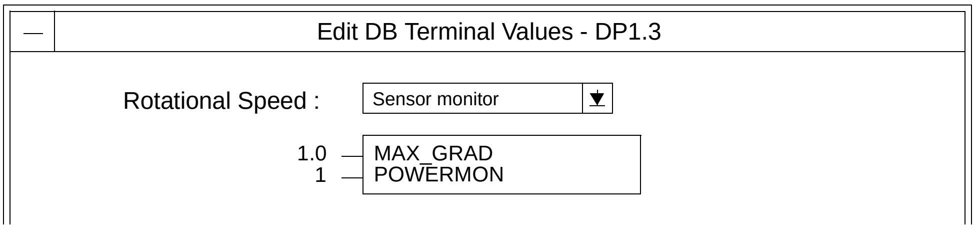
Rotational Speed : Limit check

110.0 — HI_LIM2 VALUE>H2 —
80.0 — HI_LIM1 VALUE>H1 —
10.0 — LO_LIM1 VALUE<L1 —
0.03 — LO_LIM2 VALUE<L2 —
1.0 — HYST TRIP —
HOLDTRIP —

Terminal Description, Limit check

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
HI_LIM2	user	110.0	–	**HI**gh **LIM**it no. **2** (trip limit) in percent of nominal speed in percent of nominal speed.	Range 0.0–200.0 Accepted value HI_LIM2 ≥ HI_LIM1. HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2. Moreover the difference of two neighboring limits must be greater HYST.
HI_LIM1	user	80.0	–	**HI**gh **LIM**it no. **1** in percent of nominal speed.	
LO_LIM1	user	10.0	–	**LO**w **LIM**it no. **1** in percent of nominal speed.	
LO_LIM2	user	0.03	–	**LO**w **LIM**it no. **2** (“stopped” limit) in percent of nominal speed.	
HYST	user	1.0	–	**HYST**eresis for limit check.	Range 0.0–20.0
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2** (trip limit).	–
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
VALUE<L1	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **1**.	–
VALUE<L2	system	–	B(r)	1=**VALUE** has fallen below **L**ow Limit no. **2**. Speed lower than the “stopped” limit.	–
TRIP	system	–	B(r)	1=**TRIP** condition occurred.	–
HOLDTRIP	system	–	B(r/w)	1=**HOLD TRIP** signal.	–

Sensor monitor



Edit DB Terminal Values - DP1.3

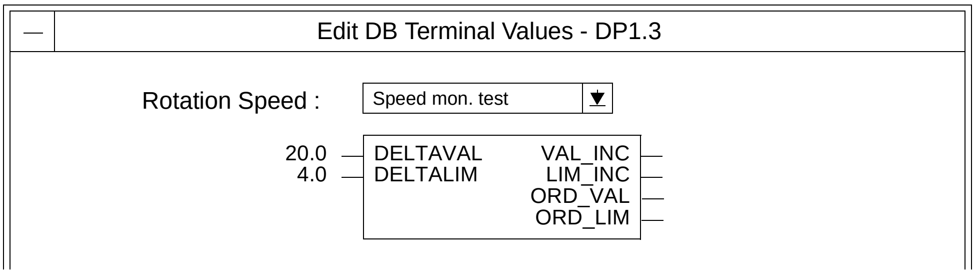
Rotational Speed : Sensor monitor

1.0 MAX_GRAD
1 POWERMON

Terminal Description, Sensor monitor

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
MAX_GRAD	user	1.0	–	**MAX**imum possible speed **GRAD**ient of wheel, in percent of nominal speed.	Range 0.0–200.0
POWERMON	user	1	–	**POWER** supply **MON**itor for externally supplied sensors. 0=disabled 1=enabled	–

Speed mon. test


Edit DB Terminal Values - DP1.3

Rotation Speed : Speed mon. test

Terminal Description, Speed mon. test

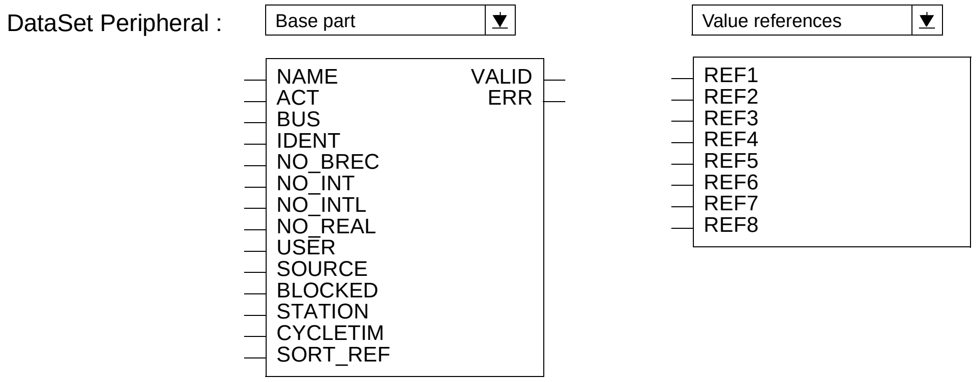
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DELTAVAL	user	20.0	–	**DELTA VAL**ue. Speed increment in percent of nominal speed.	Range 0.0–200.0
DELTALIM	user	4.0	–	**DELTA LIM**it. Limit increment in percent of nominal speed.	Range 0.0–200.0
VAL_INC	system	–	B(r)	1=Speed **VAL**ue is **INC**reased by DELTALIM for test of trip path.	–
LIM_INC	system	–	B(r)	1=Speed **LIM**it value is **INC**reased by DELTALIM for hot trip test.	–
ORD_VAL	system	–	B(r/w)	1=Speed **VAL**ue will be increased by DELTAVAL for test of trip path.	–
ORD_LIM	system	–	B(r/w)	1=Speed **LIM**it value will be increased by DELTALIM for test of trip path.	–

DataSet Peripheral DSP

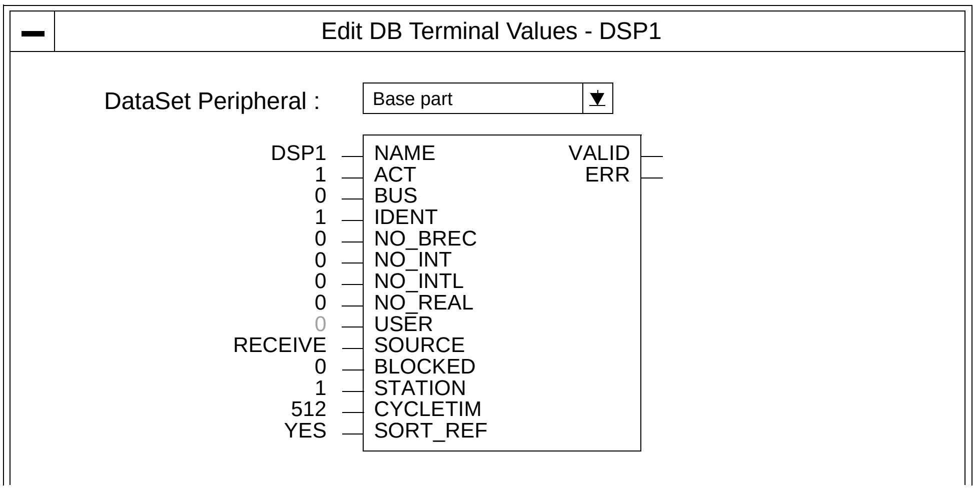
Summary

The DataSet Peripheral element represents a block of data to be received or sent over Advant Fieldbus 100 via Data Set Communication. With the element you select address, mode and data for one data set. The element defines the set, and contains references to separate DAT data base elements. In these DAT elements the data to be sent or received is stored.l.

Overview



Base part

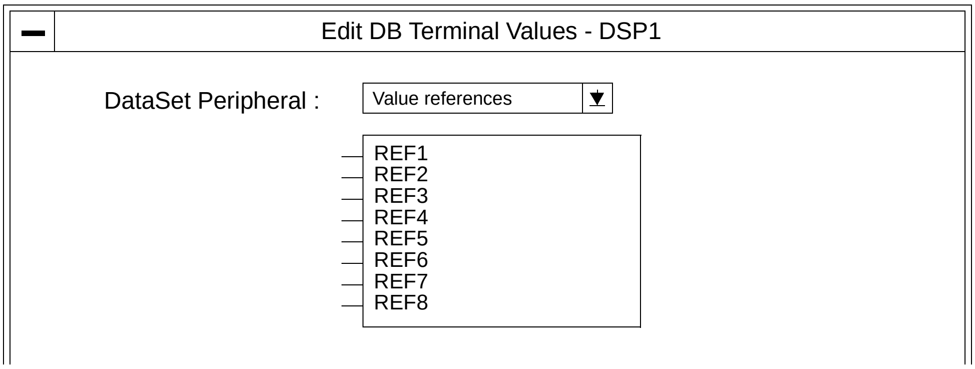


DSP1 — NAME
1 — ACT
0 — BUS
1 — IDENT
0 — NO_BREC
0 — NO_INT
0 — NO_INTL
0 — NO_REAL
0 — USER
RECEIVE — SOURCE
0 — BLOCKED
1 — STATION
512 — CYCLETIM
YES — SORT_REF

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	DSPx	–	Each Data Set must have a unique **NAME**.	Max. 12 characters.
ACT	user	1	–	The element is: 0=spare 1=**ACT**ive	–
BUS	user	0	–	**BUS** number of related bus.	Range 0–255
IDENT	user	1	–	**IDENT**ifies the Data Set on the Advant Fieldbus 100.	Range 1–50
NO_BREC	user	0	–	**N**umber of **B**oolean **REC**ords in the set.	Range 0–8
NO_INT	user	0	–	**N**umber of **INT**eger records in the set.	Range 0–8
NO_INTL	user	0	–	**N**umber of **INT**eger**L**ong records in the set.	Range 0–8
NO_REAL	user	0	–	**N**umber of **REAL** records in the set.	Range 0–8
USER	predef	0	–	**USER**. 0=Advant Fieldbus 100 communication 1=*not yet defined* 2=*not yet defined*	–
SOURCE	user	RECEIVE	–	**SOURCE**. Defines the direction of the communication. Values: RECEIVE, SEND	–
BLOCKED	user	0	–	For compatibility reason only.	–
STATION	user	1	–	**STATION** number.	Range 1–80
CYCLETIM	user	512	–	**CYCLETIM**e. Transmission interval in milliseconds. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096	–
SORT_REF	user	YES	–	**SORT REF**erences. Values: NO = references not sorted YES = references sorted in the order B, I, IL, R	–
VALID	system	–	B(r)	**VALID**. 1 = Data has been updated 0 = Data has not been received within 3×CYCLETIM. Not supported for sending.	–
ERR	system	–	B(r)	**ERR**or flag.	–

Value references



Terminal Description, Value references

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
REF1	user	*	–	**REF**erence: Name of a DAT element.	–
REF2	user	*	–	**REF**erence: Name of a DAT element.	–
: : REF8	user	*	–	**REF**erence: Name of a DAT element.	–

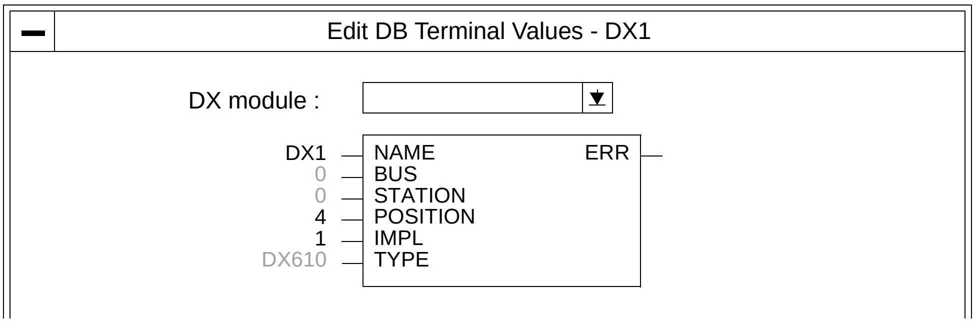
DX module DX610

Summary

DX610 is a combined I/O module to handle digital output signals and corresponding check back input signals especially for safety applications.

The Engineering Station will create:

- 1 data base element of type DX module (DX610).
- 6 data base elements of type Digital Input (DXIS610).
- 6 data base elements of type Digital Output (DXOS610).



Edit DB Terminal Values - DX1

DX module :

DX1 — NAME
0 — BUS
0 — STATION
4 — POSITION
1 — IMPL
DX610 — TYPE
ERR —

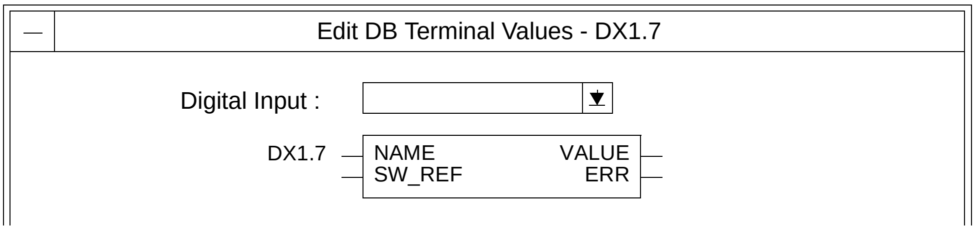
Terminal Description

Terminal Name	Value entered by	Default Value	PC connection data type	Description	Remarks
NAME	user	DXx	–	Unique module **NAME**	Max. 20 characters
BUS	predef	0	–	**BUS** number	See Section in Chapter Introduction.
STATION	predef	0	–	**STATION** number	
POSITION	user	0	–	**POSITION** of the module	
IMPL	user	1	–	**IMPL**emented 0= the module is spare 1= the module is implemented	–
TYPE	predef	DX610	–	Module **TYPE**	See call name
ERR	system	–	B(r)	**ERR**or 0= no error 1= non functional module	–

Digital Input DXIS610

Summary

This Digital Input element is subordinate to DX610.



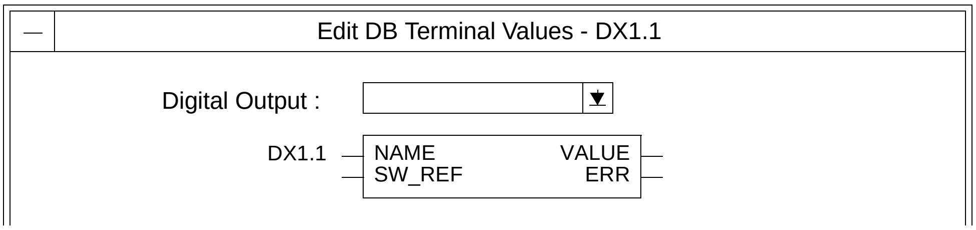
Terminal Description

Terminal Name	Value entered by	Default Value	PC connection data type	Description	Remarks
NAME	user	DXx.y	–	Unique signal **NAME**	Max. 20 characters y = 7, 8, …, 12
SW_REF	system	*	–	Backward **REF**erence to a DIS data base element	Automatically updated when referenced by a DIS element
VALUE	system	–	B(r)	Process **VALUE**	–
ERR	system	–	B(r)	**ERR**or Flag 0= no error 1= non functional module	–

Digital Output DXOS610

Summary

This Digital Output element is subordinate to DX610.



Terminal Description

Terminal Name	**Value entered by**	**Default Value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DXx.y	–	Unique signal **NAME**	Max. 20 characters y = 1, 2, …, 6
SW_REF	system	*	B(r)	Backward **REF**erence to a DOS data base element	Automatically updated when referenced by a DOS element
VALUE	system	–	B(r/w)	Process **VALUE**	–
ERR	system	–	B(r)	**ERR**or Flag 0= no error 1= non functional module	–

Event Set (Send) EVS(S)

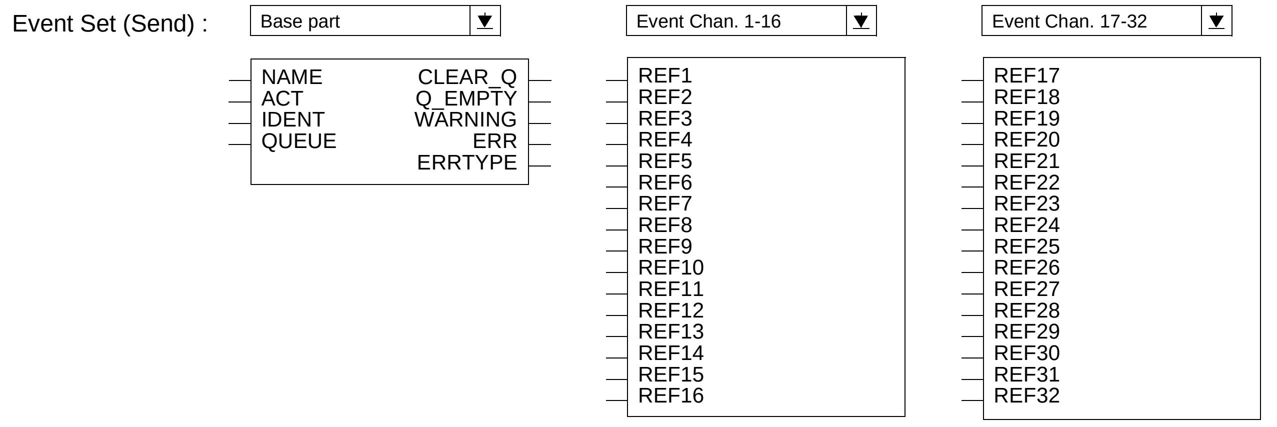
Summary

Event Set (EVS) elements are used for transport of time-tagged events from Advant Controller 160 to Advant Controller 400 Series. An Event Set element groups a set of Event Channels for sending or receiving of events.

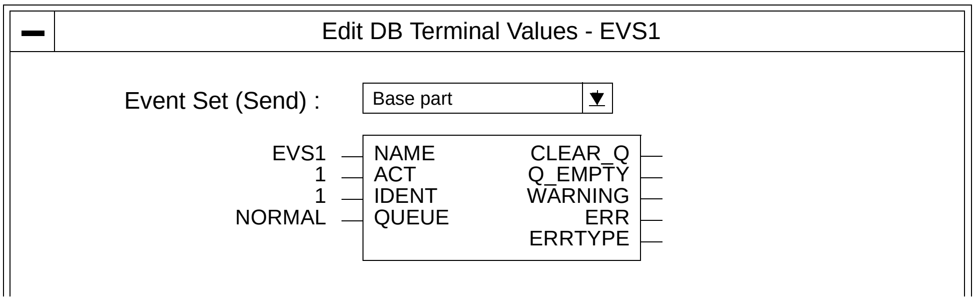
The Event Set (Send) element collects events from referenced Event Channel elements and sends them to the event receiver when requested.

The maximum number of Event Set elements is restricted to 16 per Advant Controller 160 station. An Event Channel element (AIC, DIC, DIS650, AIMVB, DIMVB) may not be referenced by different EVS(S) elements. Signals of an DI650 module cannot be referenced by different EVS(S) elements.

Overview



Base part

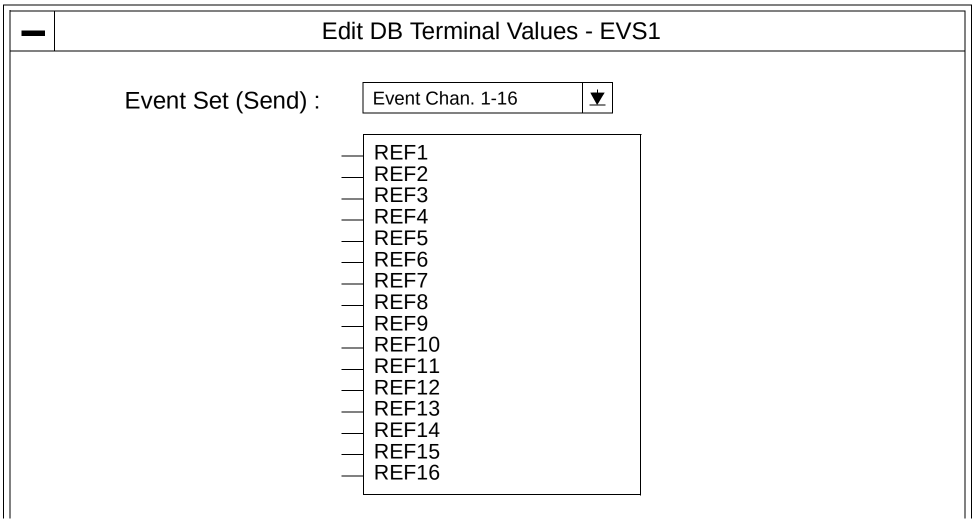


EVS1 — NAME
1 — ACT
1 — IDENT
NORMAL — QUEUE

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	EVSx	–	Unique **NAME** of the Event Set.	Max. 20 characters.
ACT	user	1	–	The element is: 0=not **ACT**ive 1=**ACT**ive	–
IDENT	user	1	–	**IDENT**ifies the Event Set element in the node.	Range 1–65535. Not allowed to change on-line.
QUEUE	user	NORMAL	–	Specifies the size of the event **QUEUE**. Values: NORMAL (100 entries), EXTENDED (1000 entries)	Not allowed to change on-line.
CLEAR_Q	system	–	B(r/w)	**CLEAR** event **Q**ueue. 0=no action 1=clear event queue	–
Q_EMPTY	system	–	B(r)	Flag indicating: 0=Event **Q**ueue is not **EMPTY** 1=Event **Q**ueue is **EMPTY**	–
WARNING	system	–	B(r)	**WARNING** flag indicating non-fatal errors.	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
ERRTYPE	system	–	I(r)	Indicating **ERR**or **TYPE**.	See table.

Event Chan. 1-16

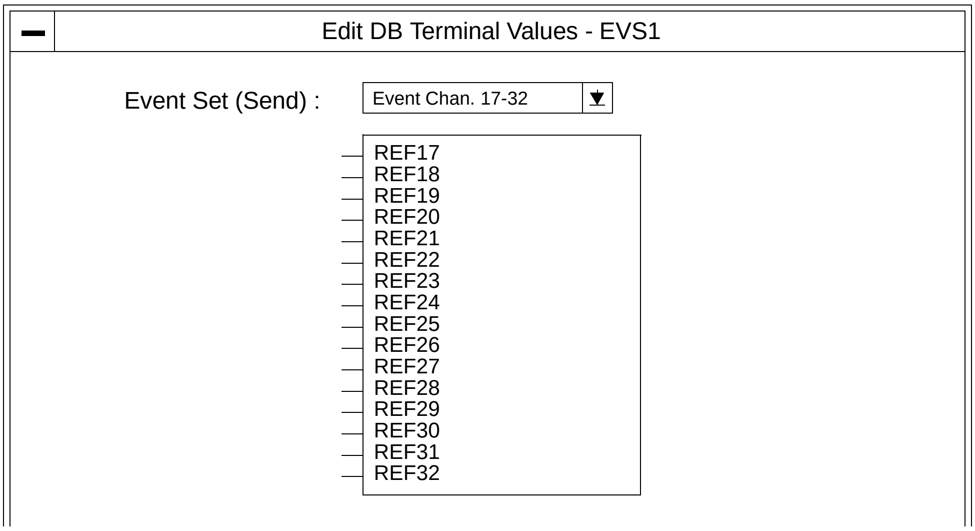


Edit DB Terminal Values - EVS1

Event Set (Send) : Event Chan. 1-16

REF1
REF2
REF3
REF4
REF5
REF6
REF7
REF8
REF9
REF10
REF11
REF12
REF13
REF14
REF15
REF16

Event Chan. 17-32



Event Set (Send) : Event Chan. 17-32

Terminal Description, Event Chan. 1-32

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
REF1	user	*	–	**REF**erence: Name of an Event Channel element.	(1)
REF2	user	*	–	**REF**erence: Name of an Event Channel element.	(1)
: : REF32	user	*	–	**REF**erence: Name of an Event Channel element.	(1)

(1) The REF1 to REF16 terminals are used to fill in the references to the event channels. References can be made to the DIC, DIMVB, AIC and AIMVB elements generating events.

Bit values of Terminal ERRTYPE

Bit	Description	Value of ERR, WARNING
0	Communication disturbed to at least one event source	WARNING=1
1	Communication disturbed to at least one event target	WARNING=1
2	Event source error	ERR=1
3	Event target error	ERR=1
4	Event queue filled to 80% or more for one or more event targets	WARNING=1
5	Event queue overflow for one or more targets	ERR=1

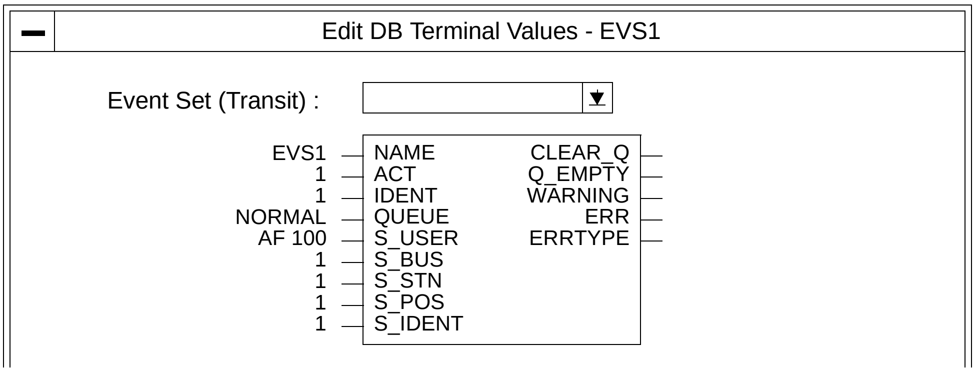
Event Set (Transit) EVS(T)

Summary

Event Set (EVS) elements are used for transport of time-tagged events from Advant Controller 160 to Advant Controller 400 Series. An Event Set element groups a set of Event Channels for sending or receiving of events.

An Event Set (Transit) is used for transiting (receiving and sending) events, when the sending Event Set is physically located in another station not reachable from Advant Controller 400 Series.

The maximum number of Event Set elements is restricted to 32 per Advant Controller 160 station.



Edit DB Terminal Values - EVS1

Event Set (Transit) :

EVS1	NAME	CLEAR_Q	
1	ACT	Q_EMPTY	
1	IDENT	WARNING	
NORMAL	QUEUE	ERR	
AF 100	S_USER	ERRTYPE	
1	S_BUS		
1	S_STN		
1	S_POS		
1	S_IDENT		

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	EVSx	–	Unique **NAME**. of the Event Set.	Max 20 characters.
ACT	user	1	–	The element is: 0=not **ACT**ive 1=**ACT**ive	–
IDENT	user	1	–	**IDENT**ifies the Event Set element in the node.	Range 1–65535. Not allowed to change on-line.
QUEUE	user	NORMAL	–	Specifies the size of the event **QUEUE**. Values: NORMAL=(100 entries), EXTENDED=(500 entries)	Not allowed to change on-line.
S_USER	user	AF 100	–	Specifies the **USER** value of the (**S**ource) Event Set. Values: AF 100, RCOM	Value RCOM only allowed if RCOM option is enabled.

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
S_BUS	user	1	–	Specifies **BUS** and **ST**atio**N** of the (**S**ource) Event Set. **S_POS** is the position of the processor module (if redundant).	For RCOM use S_BUS as NET number and S_STN as NODE number. S_POS range: 0–10.
S_STN	user	1	–		
S_POS	user	1	–		
S_IDENT	user	1	–	**S**ource **IDENT**ity of the event set.	–
CLEAR_Q	system	–	B(r/w)	Clears the event queue. 0=no action 1=**CLEAR** event **Q**ueue	–
Q_EMPTY	system	–	B(r)	Flag indicating: 0=Event **Q**ueue is not **EMPTY** 1=Event **Q**ueue is **EMPTY**	–
WARNING	system	–	B(r)	**WARNING** flag indicating non- fatal errors.	See table.
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	See table.
ERRTYPE	system	–	I(r)	Indicating **ERR**or **TYPE**.	See table.

Bit values of Terminal ERRTYPE

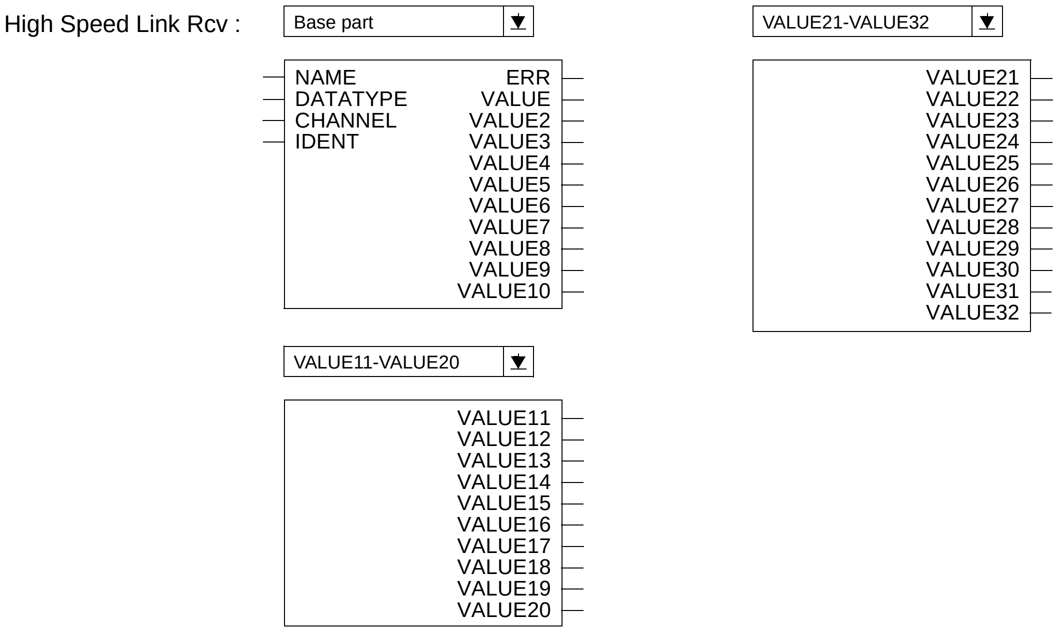
Bit	Description	Value of ERR, WARNING
0	Communication disturbed to at least one event source	WARNING=1
1	Communication disturbed to at least one event target	WARNING=1
2	Event source error	ERR=1
3	Event target error	ERR=1
4	Event queue filled to 80% or more for one or more event targets	ERR=1
5	Event queue overflow for one or more targets	ERR=1

High Speed Link Rcv HSLR

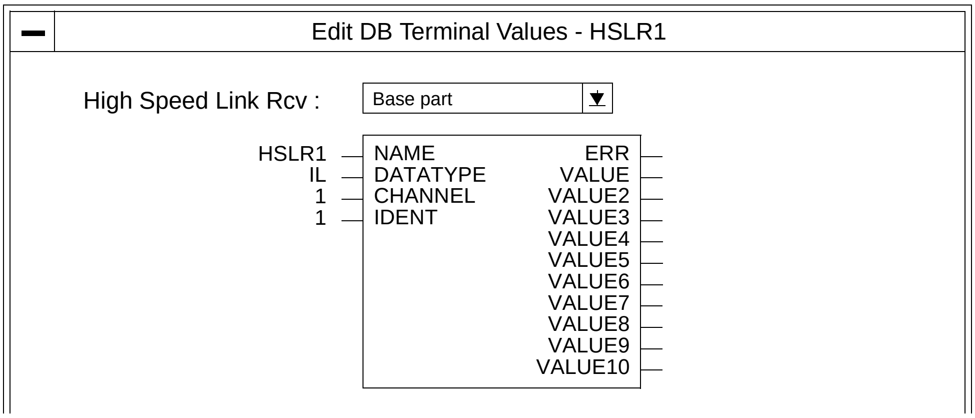
Summary

The High Speed Link Rcv element is used for data communication between PM645 processor modules. These PM645 modules must be configured with REDUNDAN = YES or TR_MODE = PLAN.

Overview



Base part



Edit DB Terminal Values - HSLR1

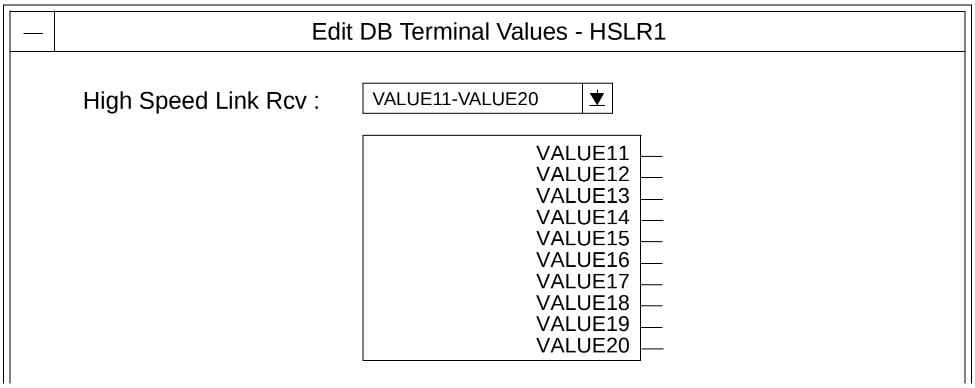
High Speed Link Rcv : Base part

HSLR1 — NAME
IL — DATATYPE
1 — CHANNEL
1 — IDENT

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	HSLRx	–	Unique **NAME**.	Max. 20 characters.
DATATYPE	user	IL	–	**DATATYPE** of values to be received: B, I, IL, R.	Cannot be changed if one of the value terminals is connected.
CHANNEL	user	1	–	The high speed link **CHANNEL** number.	Range 1–2
IDENT	user	1	–	**IDENT** for source addressed transmission.	1–4 to be used for each data type.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or frequency out of range	–
VALUE	system	–	*(r)	First **VALUE** to be received.	PC connection data type according to terminal DATATYPE.
VALUE2	system	–	*(r)	**VALUE 2** to be received.	
: : VALUE10	system	–	*(r)	**VALUE 10** to be received.	

VALUE11-VALUE20

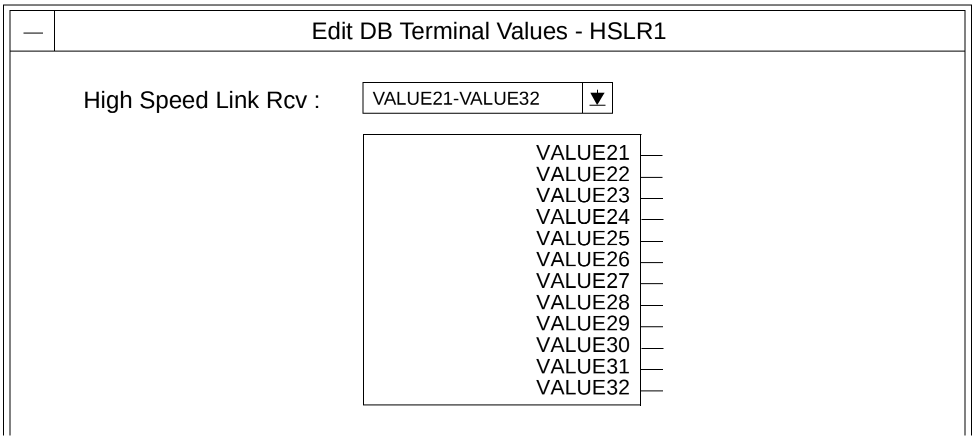


High Speed Link Rcv : VALUE11-VALUE20

Terminal Description, VALUE11-VALUE20

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE11	system	–	*(r)	**VALUE 11** to be received.	PC connection data type according to terminal DATATYPE.
: :					
VALUE20	system	–	*(r)	**VALUE 20** to be received.	

VALUE21-VALUE32



Edit DB Terminal Values - HSLR1

High Speed Link Rcv : VALUE21-VALUE32

Terminal Description, VALUE11-VALUE20

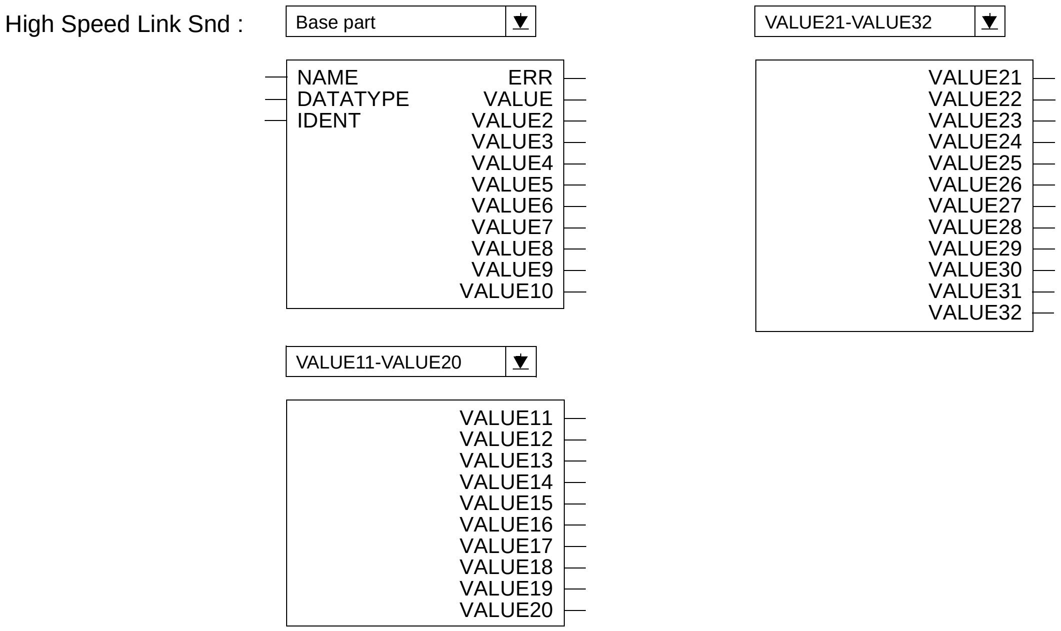
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE21	system	–	*(r)	**VALUE 21** to be received.	PC connection data type according to terminal DATATYPE.
: :					
VALUE32	system	–	*(r)	**VALUE 32** to be received.	

High Speed Link Snd HSLS

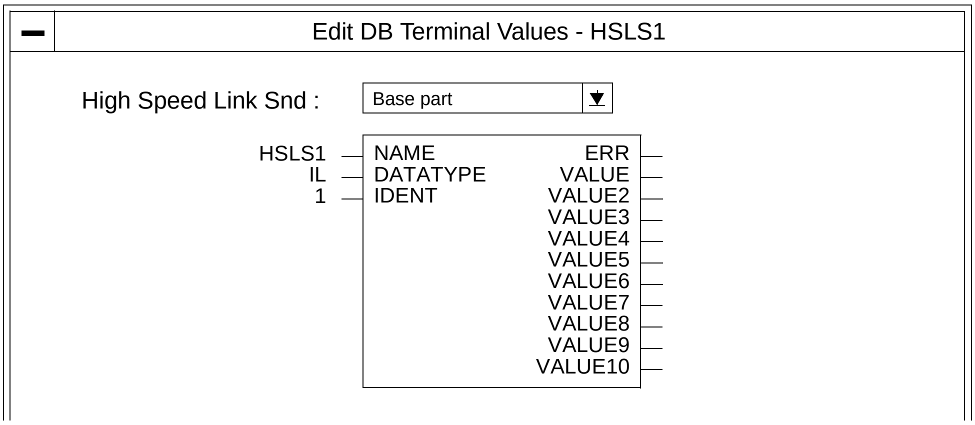
Summary

The High Speed Link Snd element is used for data communication between PM645 processor modules. These PM645 modules must be configured with REDUNDAN = YES or TR_MODE = PLAN.

Overview



Base part


Edit DB Terminal Values - HSLS1

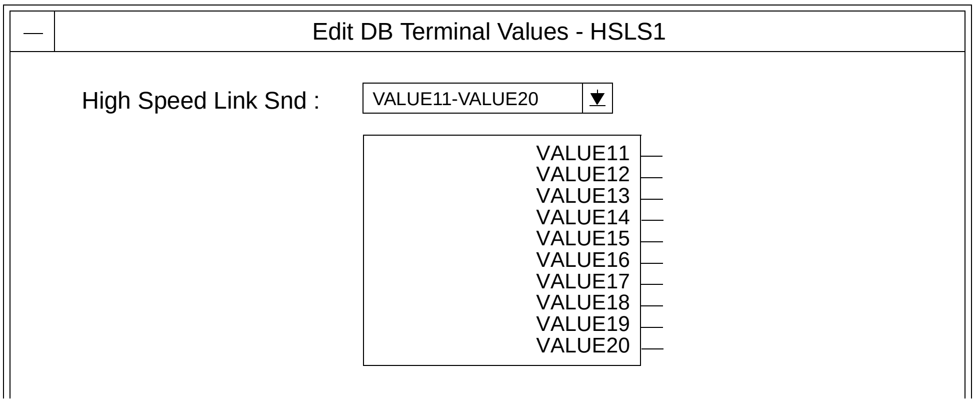
High Speed Link Snd : Base part

HSLS1 NAME
IL DATATYPE
1 IDENT

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	HSLSx	–	Unique **NAME**.	Max. 20 characters.
DATATYPE	user	IL	–	**DATATYPE** of values to be sent: B, I, IL, R.	Cannot be changed if one of the value terminals is connected.
IDENT	user	1	–	**IDENT** for source addressed transmission.	1–4 to be used for each data type.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error, or frequency out of range	–
VALUE	system	–	*(w)	First **VALUE** to be sent.	PC connection data type according to terminal DATATYPE.
VALUE2	system	–	*(w)	**VALUE 2** to be sent.	
: :					
VALUE10	system	–	*(w)	**VALUE 10** to be sent.	

VALUE11-VALUE20

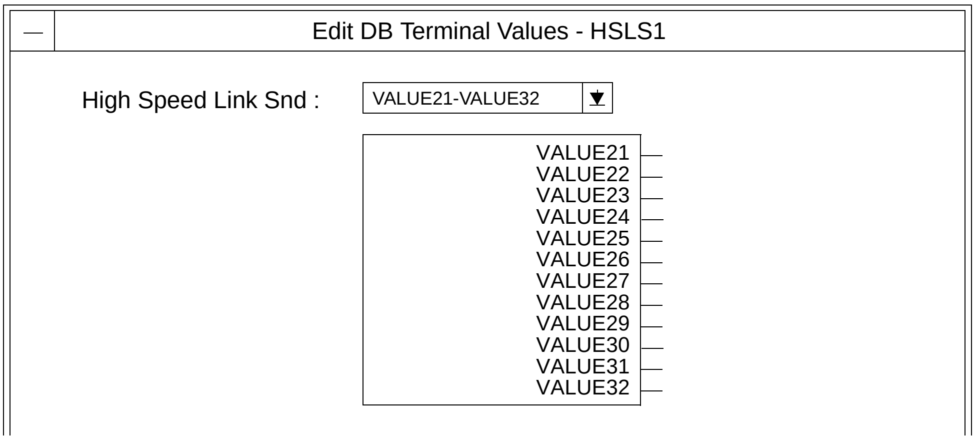


High Speed Link Snd : VALUE11-VALUE20

Terminal Description, VALUE11-VALUE20

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE11	system	–	*(w)	**VALUE 11** to be sent.	PC connection data type according to terminal DATATYPE.
: :					
VALUE20	system	–	*(w)	**VALUE 20** to be sent.	

VALUE21-VALUE32



High Speed Link Snd : VALUE21-VALUE32

Terminal Description, VALUE11-VALUE20

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE21	system	–	*(w)	**VALUE 21** to be sent.	PC connection data type according to terminal DATATYPE.
: :					
VALUE32	system	–	*(w)	**VALUE 32** to be sent.	

Boolean Data MB

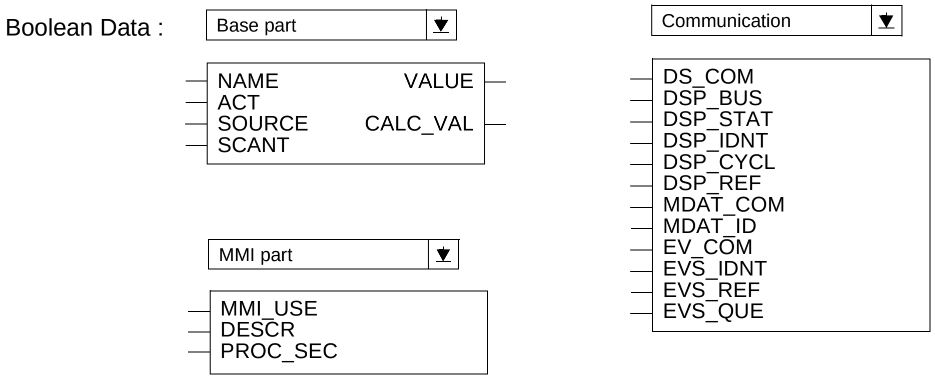
Summary

The Boolean Data data base element holds a data value representing 32 single bit values for extended data base elements.

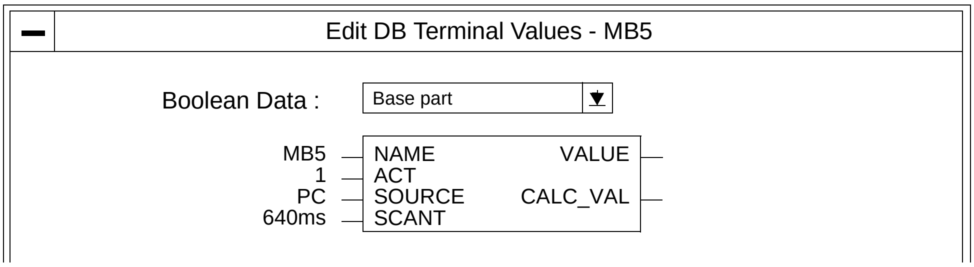
The Engineering Station will create:

- 1 data base element of type Boolean Data.
- 32 data base elements of type Boolean Value.

Overview



Base part



MB5 — NAME
1 — ACT
PC — SOURCE
640ms — SCANT

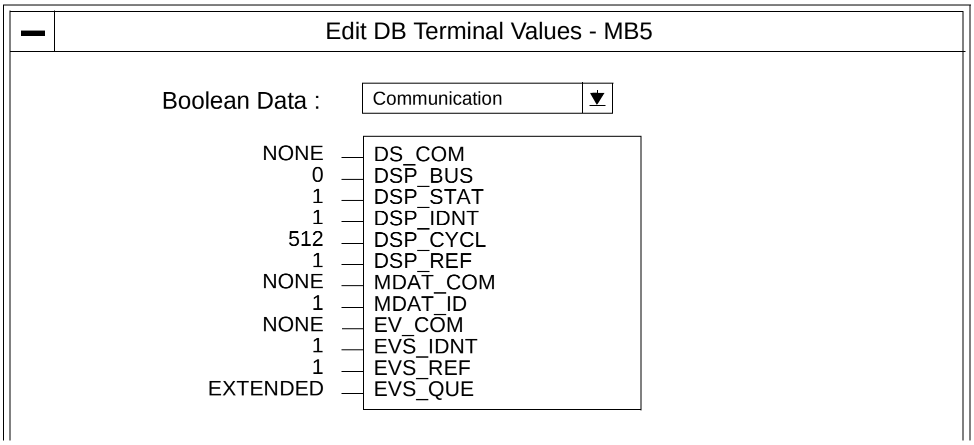
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	MIx	–	Unique **NAME**.	Max. 20 characters.

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: PC, RECEIVE, MMI.	PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
SCANT	user	640ms	–	**SCAN T**ime. Allowed values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
VALUE	PC	–	IL(r)	32 bit packed as one IntegerLong **VALUE**.	–
CALC_VAL	system	–	IL(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.

Communication



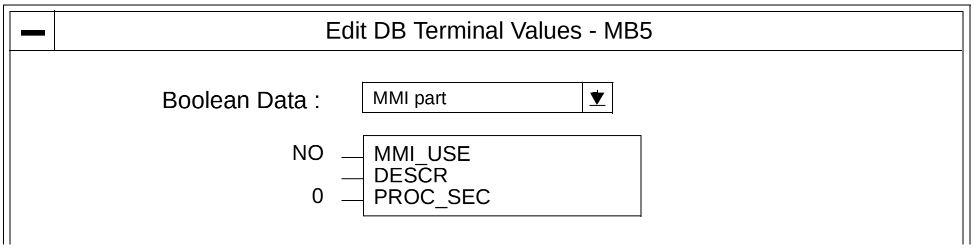
Boolean Data : Communication

NONE — DS_COM
0 — DSP_BUS
1 — DSP_STAT
1 — DSP_IDNT
512 — DSP_CYCL
1 — DSP_REF
NONE — MDAT_COM
1 — MDAT_ID
NONE — EV_COM
1 — EVS_IDNT
1 — EVS_REF
EXTENDED — EVS_QUE

Terminal Description, Communication

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of **DAT** element.	Range 1–8
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.
MDAT_ID	user	1	–	**ID**ent of corresponding **MDAT** element.	Range 1–200
EV_COM	user	NONE	–	**EV**ent **S**et **COM**munication. Values: SEND, NONE.	SEND: Generate events and send them via EVS(S). NONE: Generate no events.
EVS_IDNT	user	1	–	**ID**e**NT** of **EV**ent **S**et element.	Range 1–65000
EVS_REF	user	1	–	**REF**erence number of **EV**ent **S**et element.	Range 1–32
EVS_QUE	user	EXTENDED	–	Specifies the event **QUE**ue size of the **EV**ent **S**et element. Values: NORMAL (100 entries), EXTENDED (500 entries).	–

MMI part



Boolean Data : MMI part

NO — MMI_USE
— DESCR
0 — PROC_SEC

Terminal Description, MMI part

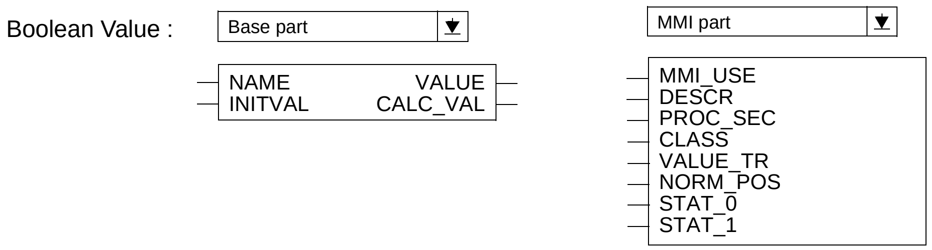
Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–
DESCR	user		–	Signal **DESCR**iption.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1–16

Boolean Value MBS

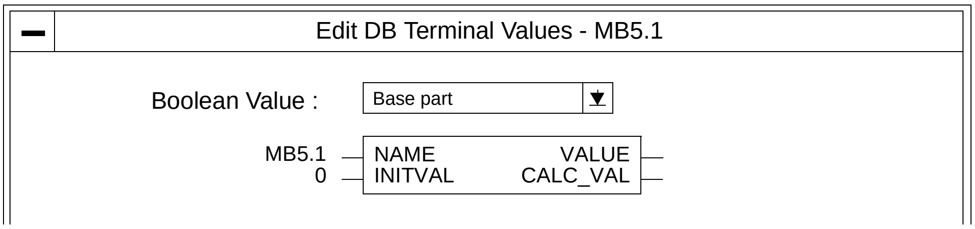
Summary

The Boolean Value data base element holds a boolean value. It is subordinate to the MB data base element.

Overview



Base part


Edit DB Terminal Values - MB5.1

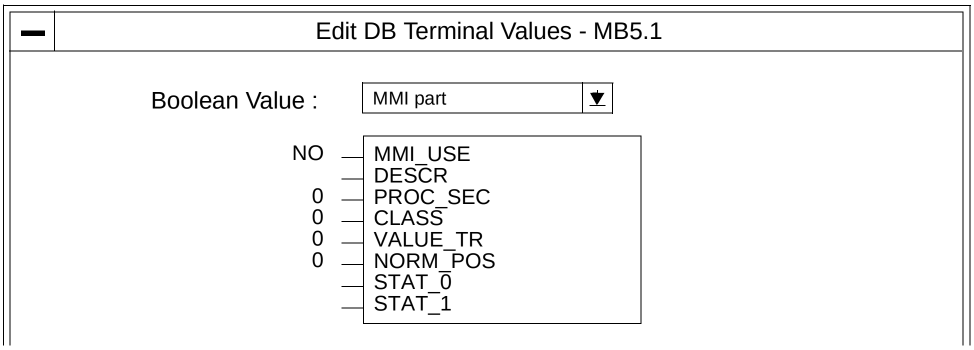
Boolean Value : Base part

MB5.1 NAME VALUE
0 INITVAL CALC_VAL

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MBx.y	–	Unique **NAME**.	Max. 20 characters.
INITVAL	user	0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	B(r)	Boolean **VALUE**.	–
CALC_VAL	system	–	B(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.

MMI part



Edit DB Terminal Values - MB5.1

Boolean Value : MMI part

NO — MMI_USE
— DESCR
0 — PROC_SEC
0 — CLASS
0 — VALUE_TR
0 — NORM_POS
— STAT_0
— STAT_1

Terminal Description, MMI part

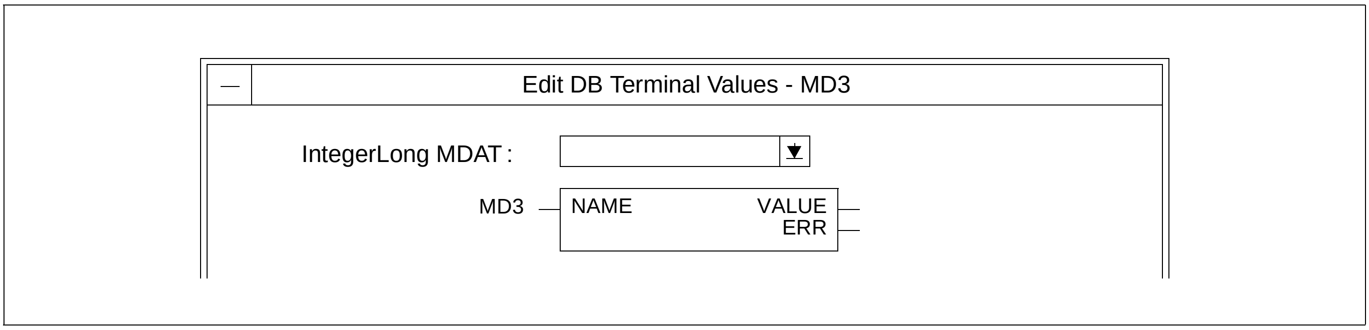
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–
DESCR	user		–	Value **DESCR**iption.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1–16
CLASS	user	0	–	**CLASS** subdivides process station.	Range -128–127
VALUE_TR	user	0	–	**VALUE TR**eatment.	Recommended settings: 0 = no event reporting 1 = event reporting, no alarm handling 2 = event reporting & alarm handling.
NORM_POS	user	0	–	**NORM**al **POS**ition. Normal signal value.	–
STAT_0	user		–	Text for **STAT**us = **0**.	Max. 20 characters.
STAT_1	user		–	Text for **STAT**us = **1**.	Max. 20 characters.

IntegerLong MDAT MDAT(IL)

Summary

The IntegerLong MDAT data base element holds one IntegerLong data value. It is used for communication between PM645 processor modules in one base station.

By means of the call name MDAT(IL) the Engineering Station will create 1 data base element of type IntegerLong MDAT.



Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error.	–

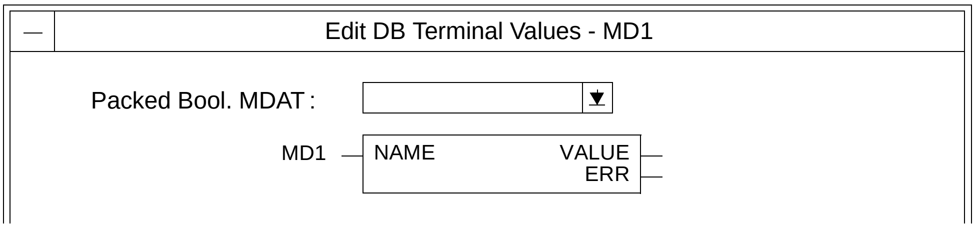
Packed Bool. MDAT MDAT(NB)

Summary

The Packed Bool. MDAT data base element holds a data value representing 32 bit values. It is used for communication between PM645 processor modules in one base station.

The Engineering Station will create:

- 1 data base element of type Packed Bool. MDAT.
- 32 data base elements of type Boolean MDATS.



Edit DB Terminal Values - MD1

Packed Bool. MDAT :

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	MDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong representing 32 packed boolean values.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error.	–

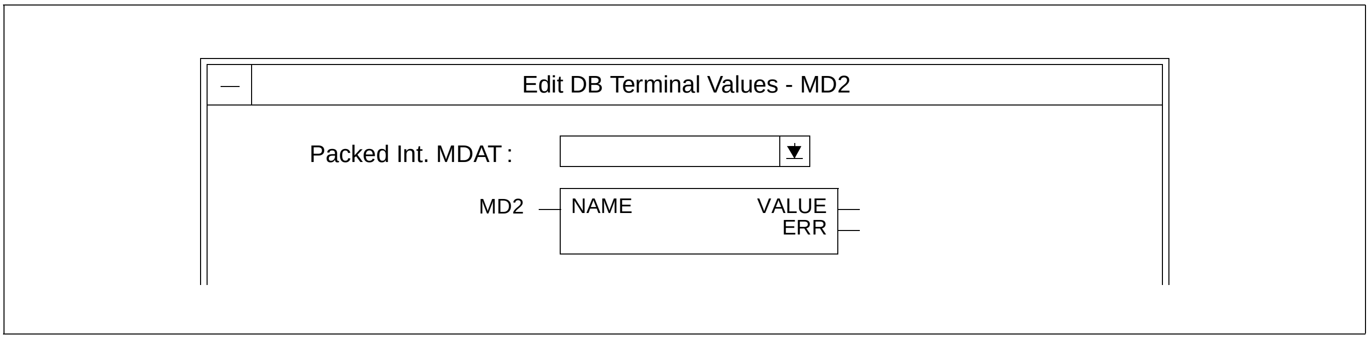
Packed Int. MDAT MDAT(NI)

Summary

The Packed Int. MDAT data base element holds a data value representing two 16 bit integer values. It is used for communication between PM645 processor modules in one base station.

The Engineering Station will create:

- 1 data base element of type Packed Int. MDAT.
- 2 data base elements of type Integer MDATS.



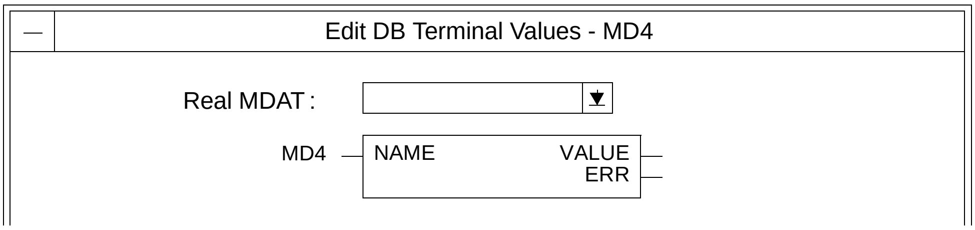
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong representing 2 packed 16 bit integer values.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error.	–

Real MDAT MDAT(R)

Summary

The Real MDAT data base element holds one real data value. It is used for communication between PM645 processor modules in one base station.



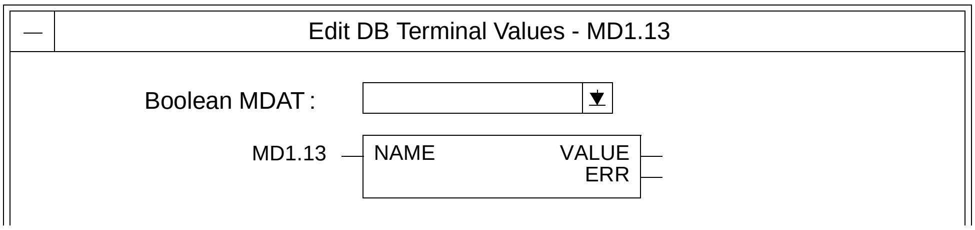
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	R(r/w)	**VALUE** of type Real.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error.	–

Boolean MDAT MDATS(NB)

Summary

The Boolean MDAT data base element holds one boolean data value. It is subordinate to the MDAT(NB) data base element.



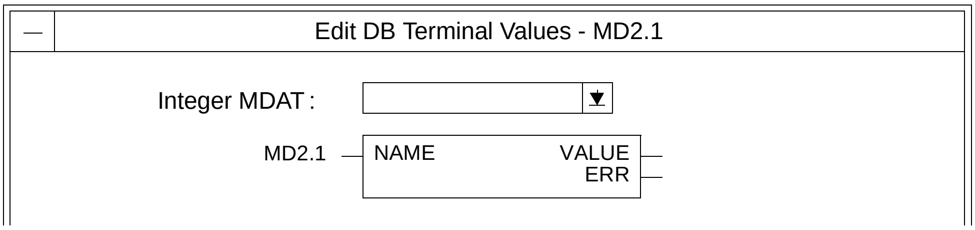
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MDx.y	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	B(r/w)	**VALUE** of type Boolean.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error.	–

Integer MDAT MDATS(NI)

Summary

The Integer MDAT data base element holds one 16 bit integer data value. It is subordinate to the MDAT(NI) data base element.



Terminal Description

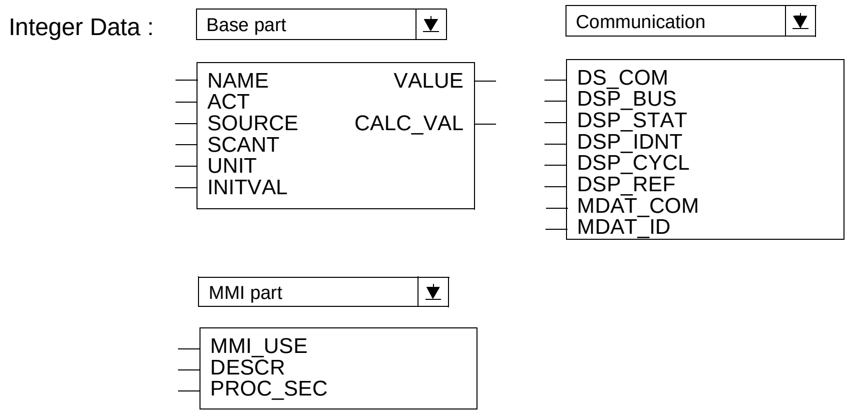
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MDx.y	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware or configuration error.	–

Integer Data MI

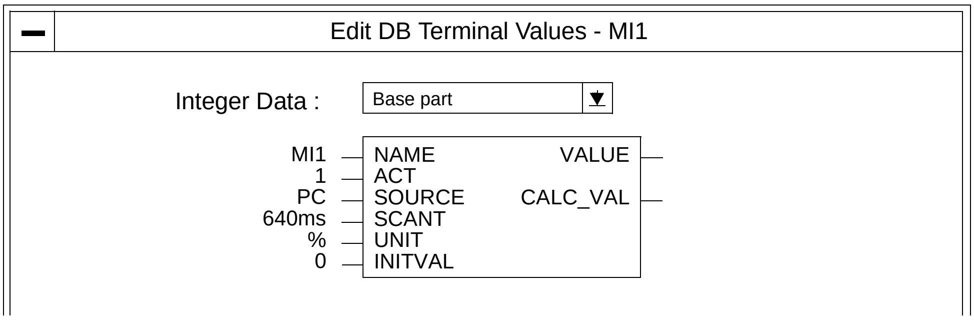
Summary

The Integer Data element represents a 16 bit integer value for extended data base elements.

Overview



Base part


Edit DB Terminal Values - MI1

Integer Data : Base part

MI1 — NAME
1 — ACT
PC — SOURCE
640ms — SCANT
% — UNIT
0 — INITVAL

VALUE —
CALC_VAL —

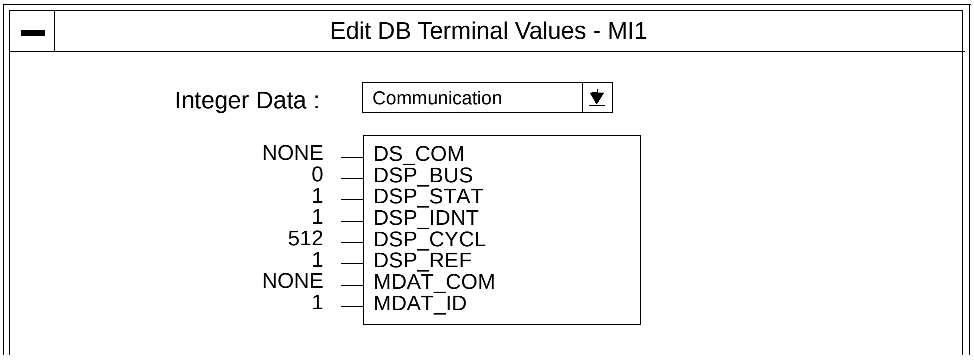
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	MIx	–	Unique **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: PC, RECEIVE, MMI.	PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
SCANT	user	640ms	–	**SCAN T**ime. Allowed values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
UNIT	user	%	–	The signal **UNIT** in engineering units.	Max. 6 characters.
INITVAL	user	0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	I(r)	Integer **VALUE**.	–
CALC_VAL	system	–	I(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.

Communication



Edit DB Terminal Values - MI1

Integer Data : Communication

NONE — DS_COM
0 — DSP_BUS
1 — DSP_STAT
1 — DSP_IDNT
512 — DSP_CYCL
1 — DSP_REF
NONE — MDAT_COM
1 — MDAT_ID

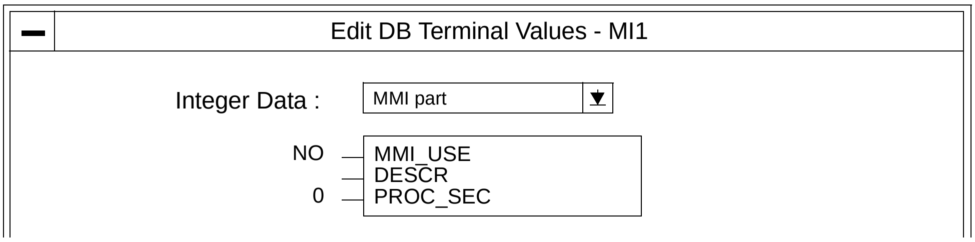
Terminal Description, Communication

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.

Terminal Description, Communication (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of **DAT** element.	Range 1–8
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.
MDAT_ID	user	1	–	**ID**ent of corresponding **MDAT** element.	Range 1–200

MMI part



Edit DB Terminal Values - MI1

Integer Data : MMI part

NO — MMI_USE
— DESCR
0 — PROC_SEC

Terminal Description, MMI part

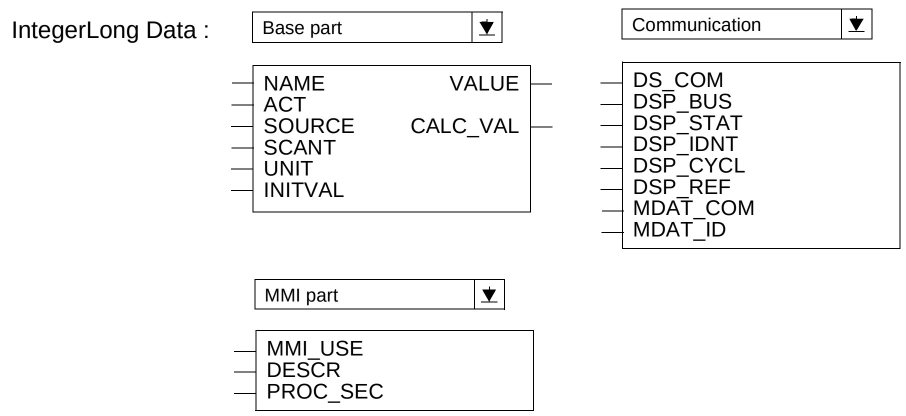
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–
DESCR	user		–	Value **DESCR**iption.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1–16

IntegerLong Data MIL

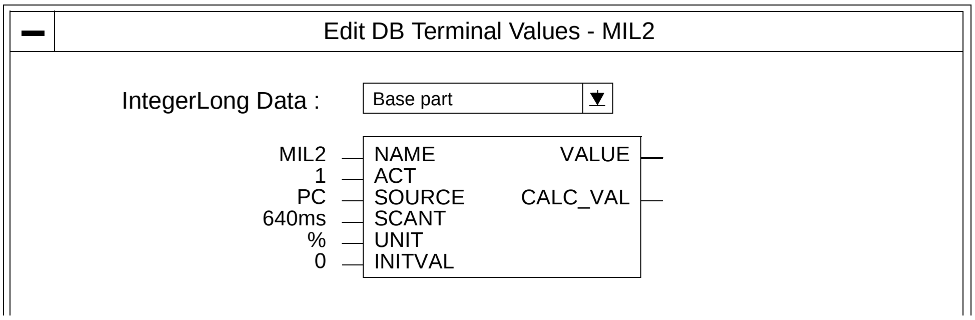
Summary

The IntegerLong Data element represents a 32 bit integer value for extended data base elements.

Overview



Base part



MIL2 — NAME
1 — ACT
PC — SOURCE
640ms — SCANT
% — UNIT
0 — INITVAL

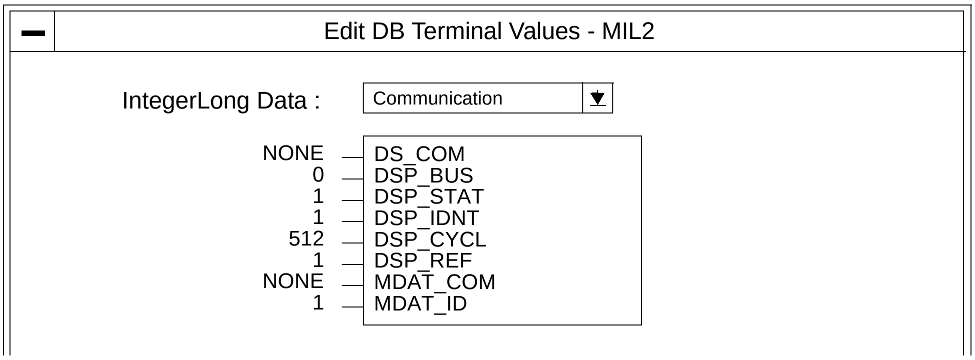
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	MILx	–	Unique **NAME**.	Max. 20 characters.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: PC, RECEIVE, MMI.	PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
SCANT	user	640ms	–	**SCAN T**ime. Allowed values: 10 ms, 20 ms, 40 ms, 80 ms, 160 ms, 320 ms, 640 ms, 1280 ms, 2560 ms, 5120 ms, 10240 ms, 20480 ms, 40960 ms, 81920 ms, 163840 ms, 327680 ms	–
UNIT	user	%	–	The signal **UNIT** in engineering units.	Max. 6 characters.
INITVAL	user	0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	IL(r)	Process **VALUE**.	–
CALC_VAL	system	–	IL(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.

Communication



Edit DB Terminal Values - MIL2

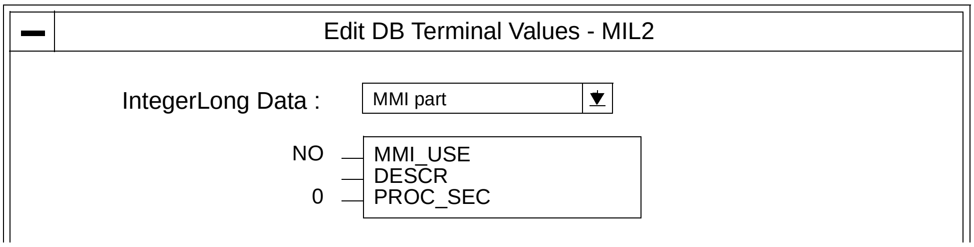
IntegerLong Data : Communication

NONE	DS_COM
0	DSP_BUS
1	DSP_STAT
1	DSP_IDNT
512	DSP_CYCL
1	DSP_REF
NONE	MDAT_COM
1	MDAT_ID

Terminal Description, Communication

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of **DAT** element.	Range 1–8
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.
MDAT_ID	user	1	–	**ID**ent of corresponding **MDAT** element.	Range 1–200

MMI part



Edit DB Terminal Values - MIL2

IntegerLong Data : MMI part

NO — MMI_USE
— DESCR
0 — PROC_SEC

Terminal Description, MMI part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–

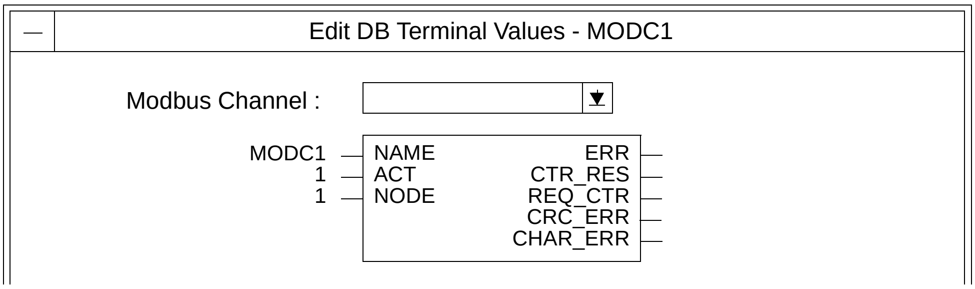
Terminal Description, MMI part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DESCR	user		–	Value **DESCR**iption.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. -1: Value cannot be selected and presented in lists.	Range -1–16

Modbus Channel MODCHAN

Summary

The Modbus Channel data base element specifies a Modbus communication channel for the second serial interface CH2 of the processor modules (PM64x). The element is similar to the MVI Channel element, but has no further references. It supports a variable Modbus node address. If this data base element is not used, a fixed node address of 1 will be configured.


Edit DB Terminal Values - MODC1

Modbus Channel :

MODC1 — NAME
1 — ACT
1 — NODE

Terminal Description

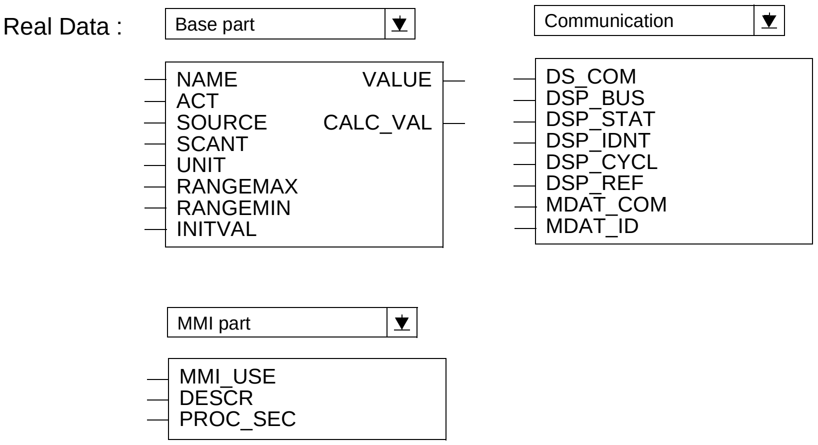
Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	MODCx	–	Unique element **NAME**.	Max. 20 characters.
ACT	user	1	–	The element is: 0=spare 1=**ACT**ive	–
NODE	user	1	–	Own **NODE** number of Modbus channel.	Range 1–254. Not allowed to change on-line.
ERR	system	–	B(r)	**ERR**or flag.	–
CTR_RES	PC	–	B(r/w)	**RES**et all **C**oun**T**e**R**s.	–
REQ_CTR	system/ PC	–	IL(r)	**REQ**uest **C**oun**T**e**R**. Counts all Modbus telegrams received.	–
CRC_ERR	system/ PC	–	IL(r)	**CRC ERR**or counter. Counts all CRC errors in telegrams received.	–
CHAR_ERR	system/ PC	–	IL(r)	**CHAR**acter **ERR**or counter. Counts all character errors in telegrams received.	–

Real Data MR

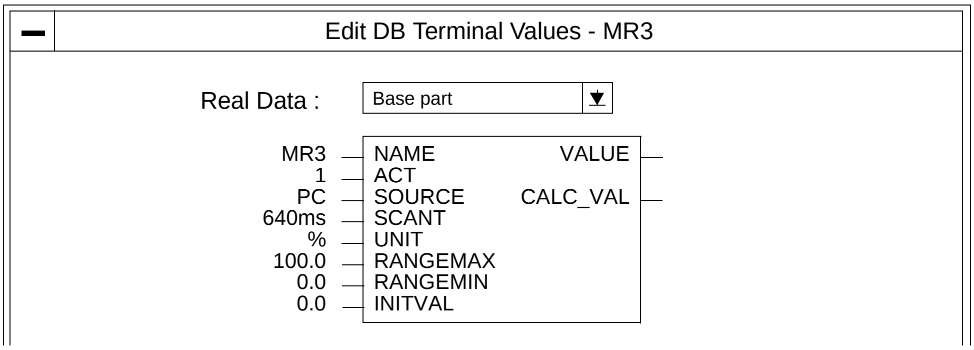
Summary

The Real Data element represents one real value for extended data base elements.

Overview



Base part


Edit DB Terminal Values - MR3

Real Data : Base part

MR3 — NAME
1 — ACT
PC — SOURCE
640ms — SCANT
% — UNIT
100.0 — RANGEMAX
0.0 — RANGEMIN
0.0 — INITVAL

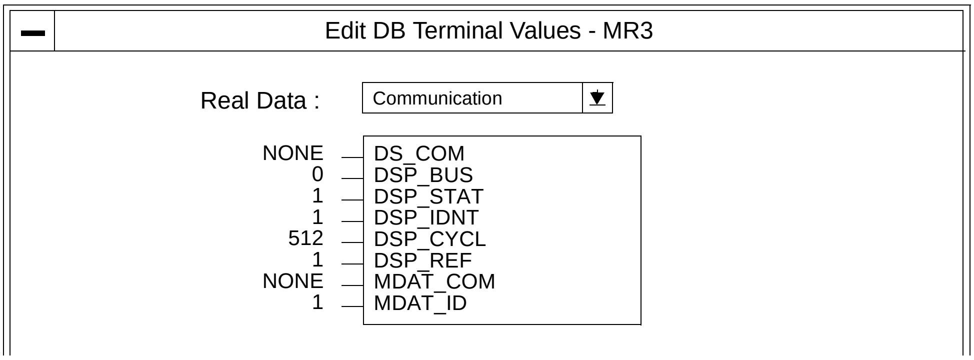
Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MRx	–	Unique **NAME**.	Max. 20 characters.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	–
SOURCE	user	PC	–	Specifies the **SOURCE** of the value. Values: PC, RECEIVE, MMI.	PC: Value is provided by a PC element connected to terminal CALC_VAL. RECEIVE: Value is received via AF 100 data set communication. MMI: Value provided by Operator Station.
SCANT	user	640ms	–	**SCAN T**ime. Allowed values: 10 ms, 20 ms, 40 ms, 80 ms, 160 ms, 320 ms, 640 ms, 1280 ms, 2560 ms, 5120 ms, 10240 ms, 20480 ms, 40960 ms, 81920 ms, 163840 ms, 327680 ms	–
UNIT	user	%	–	The signal **UNIT** in engineering units.	Max. 6 characters.
RANGEMAX	user	100.0	–	**RANGE MAX**imum input in engineering units (for example 100 kg) for maximum input signal (for example 20 mA).	–
RANGEMIN	user	0.0	–	**RANGE MIN**imum input in engineering units (for example 0 kg) for minimum input signal (for example 4 mA).	–
INITVAL	user	0.0	–	**INIT**ial **VAL**ue at controller start-up.	–
VALUE	PC	–	R(r)	Real **VALUE**.	–
CALC_VAL	system	–	R(r/w)	**CALC**ulated **VAL**ue.	Written if SOURCE = PC.

Communication



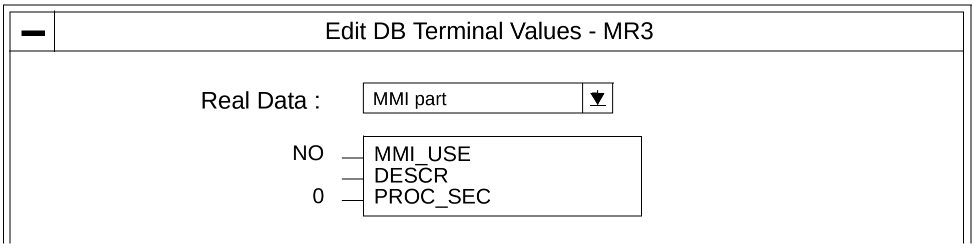
Real Data : Communication

NONE	DS_COM
0	DSP_BUS
1	DSP_STAT
1	DSP_IDNT
512	DSP_CYCL
1	DSP_REF
NONE	MDAT_COM
1	MDAT_ID

Terminal Description, Communication

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DS_COM	user	NONE	–	**D**ata **S**et **COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via DSP. RECEIVE: Value will be received via DSP if SOURCE is set to RECEIVE. NONE: No DS communication.
DSP_BUS	user	1	–	**BUS** of corresponding **DSP** element.	Range 0–255
DSP_STAT	user	1	–	**STAT**ion of corresponding **DSP** element.	Range 1–80
DSP_IDNT	user	1	–	**ID**e**NT** of corresponding **DSP** element.	Range 1–50
DSP_CYCL	user	512	–	Transmission **CYCL**e time of corresponding **DSP** element. Values: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.	–
DSP_REF	user	1	–	**REF**erence number of **DAT** element.	Range 1–7
MDAT_COM	user	NONE	–	**MDAT COM**munication. Values: SEND, RECEIVE, NONE.	SEND: Value will be sent via MDAT. RECEIVE: Value will be received via MDAT if SOURCE = RECEIVE. NONE: No MDAT communication.
MDAT_ID	user	1	–	**ID**ent of corresponding **MDAT** element.	Range 1–200

MMI part


Edit DB Terminal Values - MR3

Real Data : MMI part

NO — MMI_USE
— DESCR
0 — PROC_SEC

Terminal Description, MMI part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
MMI_USE	user	NO	–	Mark object for **MMI USE**. Values: YES, NO.	–

Terminal Description, MMI part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DESCR	user		–	Value **DESCR**iption.	–
PROC_SEC	user	0	–	**PROC**ess **SEC**tion is used for sectioning the alarm handling. 0: No sectioning. Value may be presented in lists. –1: Value cannot be selected and presented in lists.	Range -1–16

MVI Data Block MVB

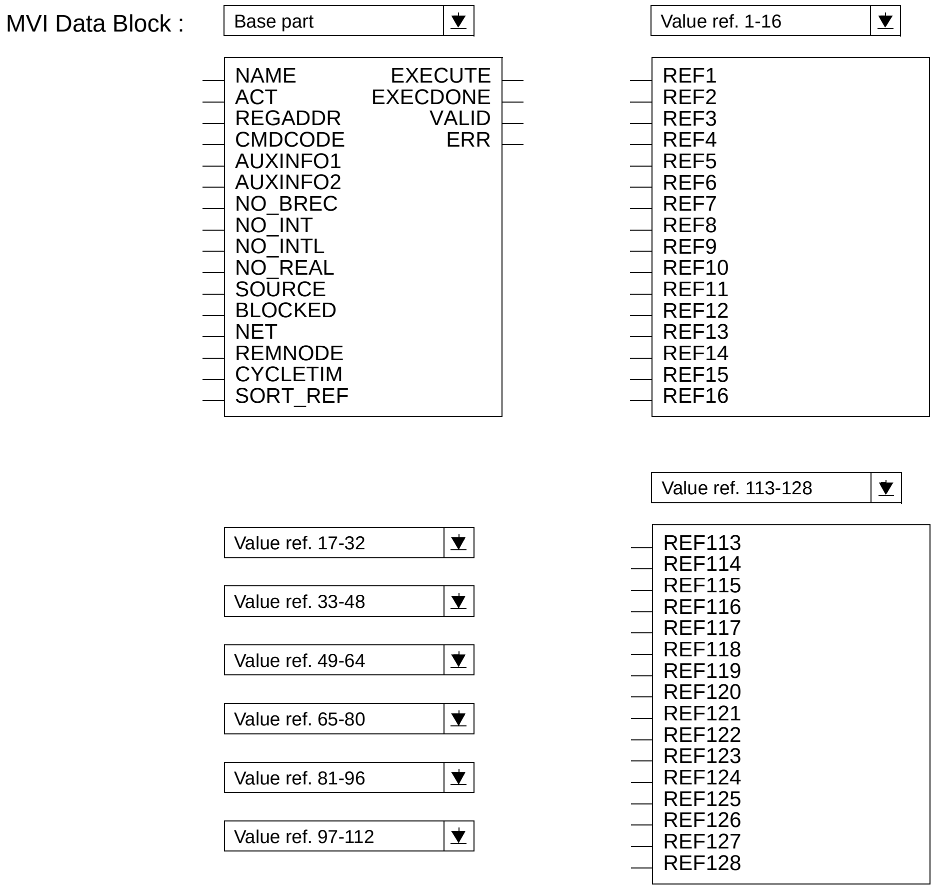
Summary

The MVI Data Block element specifies one MVI Data Block. It configures either data transmission or commands for the MVI protocol handler (in our case the RCOM protocol handler).

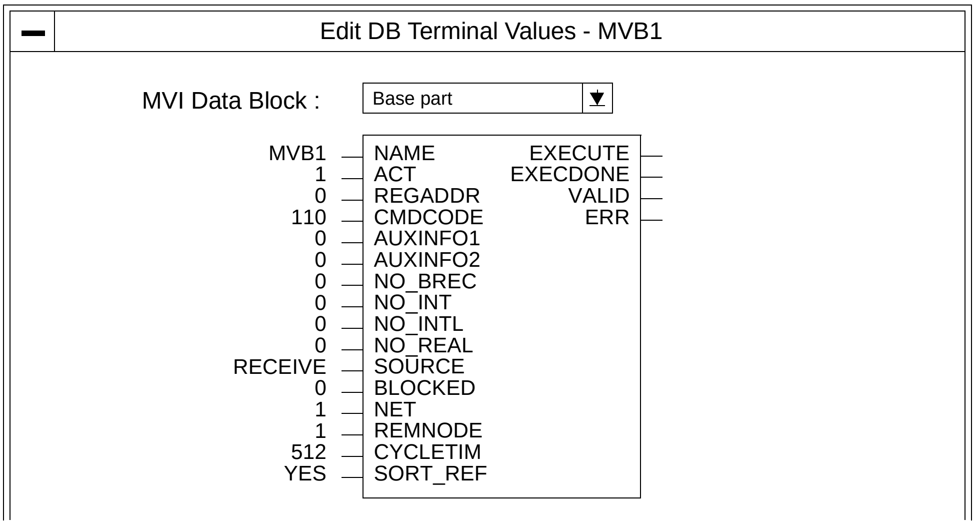
An MVI Data Block is a collection of up to 128 DAT’s of any type. For RCOM only 8 DAT’s and for RCOM+ only 24 DAT’s are used.

The creation of a MVI Data Block element by the Engineering Station implies the automatic creation of the needed DAT elements.

Overview



Base part



Edit DB Terminal Values - MVB1

MVI Data Block : Base part

```
     MVB1 — NAME         EXECUTE —
        1 — ACT         EXECDONE —
        0 — REGADDR        VALID —
      110 — CMDCODE          ERR —
        0 — AUXINFO1
        0 — AUXINFO2
        0 — NO_BREC
        0 — NO_INT
        0 — NO_INTL
        0 — NO_REAL
  RECEIVE — SOURCE
        0 — BLOCKED
        1 — NET
        1 — REMNODE
      512 — CYCLETIM
      YES — SORT_REF
```

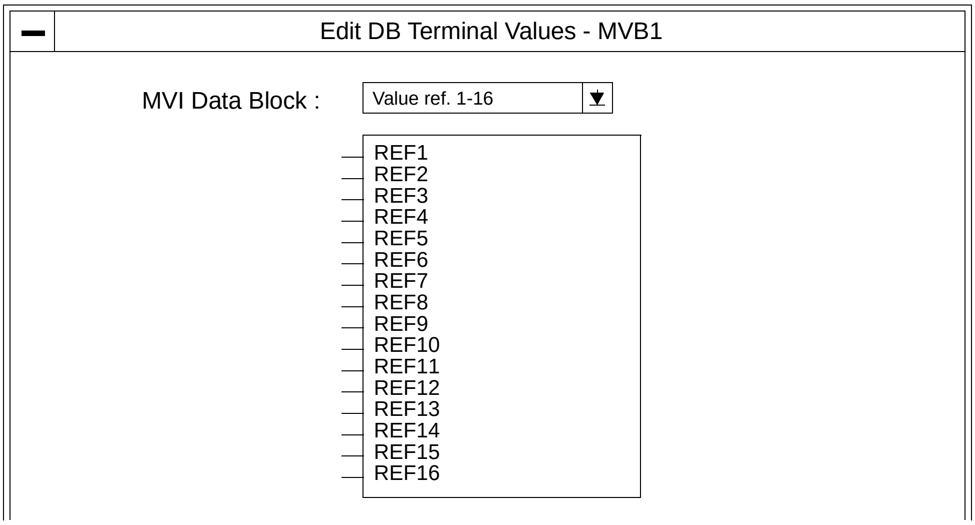
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	MVBx	–	Unique module **NAME**.	Max. 12 characters.
ACT	user	1	–	The element is: 0=spare 1=**ACT**ive	–
REGADDR	user	0	–	**REG**ister start **ADDR**ess in external PLC/RTU. In RCOM: MVB identifier.	RCOM: 1–240, Siemens 3964(R), others: IL, MODBUS: 0–49999
CMDCODE	user	110	–	**C**o**M**mand **CODE** to be executed by the MVI protocol handler, protocol dependent.	Range 1–500 (see tables).
AUXINFO1	user	0	–	**AUX**iliary **INFO**rmation **1**, protocol dependent.	–
AUXINFO2	user	0	–	**AUX**iliary **INFO**rmation **2**, protocol dependent.	–
NO_BREC	user	0	–	**N**umber of **B**oolean **REC**ords DAT(B).	Range 0–128
NO_INT	user	0	–	**N**umber of **INT**eger records DAT(I).	Range 0–128
NO_INTL	user	0	–	**N**umber of **INT**eger**L**ong records DAT(IL).	Range 0–128
NO_REAL	user	0	–	**N**umber of **REAL** records DAT(R).	Range 0–128
SOURCE	user	RECEIVE	–	**SOURCE**. Defines the direction of the data transmission. Values: RECEIVE, SEND	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BLOCKED	user/PC	0	B(r/w)	Cyclic data transmission. 0=not **BLOCKED** 1=**BLOCKED**	Not allowed to change on-line.
NET	user	1	–	MVI **NET**work number used for Data Block transmission.	Range 1–9
REMNODE	user	1	–	**REM**ote **NODE** number. In master mode: node no. of slave In slave mode: node no. of master	Range 1–255
CYCLETIM	user	512	–	Defines the **CYCLE TIM**e of the protocol command execution in multiples of 100 ms. Values: 0 (no cyclic execution), 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768	–
SORT_REF	user	YES	–	**SORT REF**erences. Values: NO = references not sorted YES = references sorted in the order B, I, IL, R.	–
EXECUTE	system	–	B(r/w)	**EXECUTE** invokes single execution of the specified protocol handler command when changing from 0 to 1.	–
EXECDONE	system	–	B(r)	**EXECDONE** indicates that the single execution invoked by EXECUTE was done.	–
VALID	system	–	B(r/w)	Boolean **VAL**ue (**ID**entity) for handshaking between MVI and PC program. • Receiving MVB: 0=MVB has not been received within 3×CYCLETIM 1=MVB has been updated • Sending MVB: 0=MVB has not been sent 1=MVB has been sent	–
ERR	system	–	B(r)	**ERR**or flag.	–

Value ref. 1-16



MVI Data Block : Value ref. 1-16

Value ref. 17-32, Value ref. 33-48, Value ref. 49-64, Value ref. 65-80, Value ref. 81-96, Value ref. 97-112, Value ref. 113-128

The value references 17-128 are analogous to Value ref. 1-16.

Terminal Description, Value ref. 1-128

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
REF1	user	*	–	**REF**erence: Name of a DAT element.	–
REF2	user	*	–	**REF**erence: Name of a DAT element.	–
: REF128	user	*	–	**REF**erence: Name of a DAT element.	–

List of Command Codes for RCOM

CMDCODE	**Move Block**		**Command Description**
	MASTER=0	**MASTER=1**	
3	–	3CC	Dial-up
4	–	3CC	Hang-up
110	3D4	3C8	Read
210	3D0	3C4	Write
301	–	3CC	Cold start
302	–	3CC	Warm start
305	–	3CC	Normalization
308	–	3CC	Clock setting

List of Command Codes for Siemens 3964(R)

CMDCODE	**Move Block**		**Command Description**
	MASTER=0	**MASTER=1**	
102	3D4	3C8	Receive integer
109	3D4	3C8	Receive binary
202	3D0	3C4	Transmit integer
209	3D0	3C4	Transmit binary

List of Command Codes for MODBUS

CMDCODE	**Move Block**		**Command Description**
	MASTER=0	**MASTER=1**	
101	–	3C4	Read exception st.
102	3D0	3C8	Read I/O register
104	3D0	3C8	Read I/O register
106	3D0	3C8	Read I/O status
201	3D4	3C4	Preset 1 register
202	3D4	3C4	Preset registers
205	3D4	3C4	Force 1 coil
206	3D4	3C4	Force coils

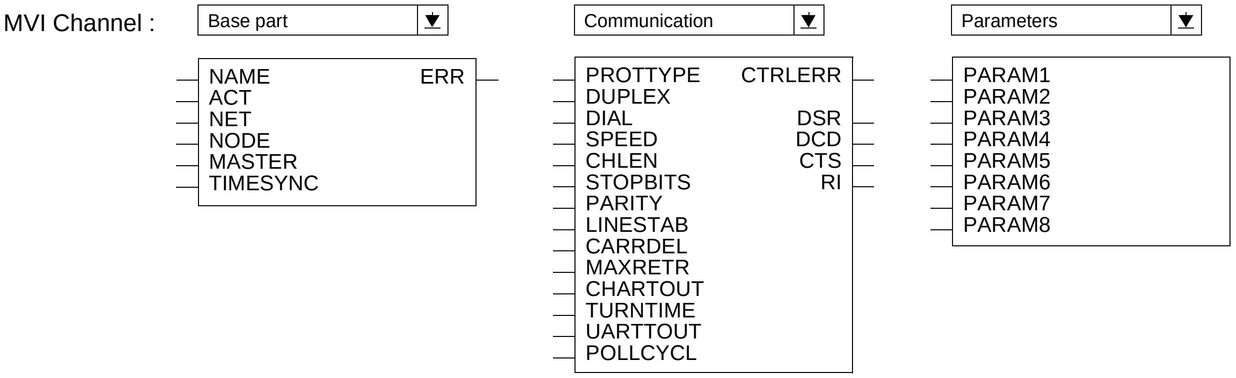
MVI Channel MVICHAN

Summary

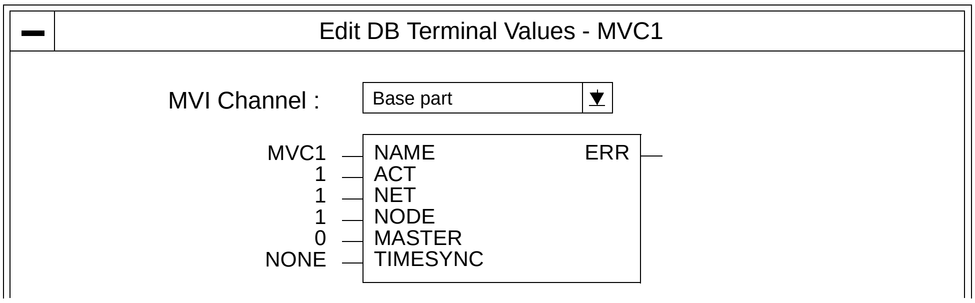
The MVI Channel element specifies the configuration of an MVI Channel.

An MVI channel can consist of up to 25 nodes configured with data base element type MVI Node.

Overview



Base part



Edit DB Terminal Values - MVC1

MVI Channel : Base part

MVC1 — NAME ERR
1 — ACT
1 — NET
1 — NODE
0 — MASTER
NONE — TIMESYNC

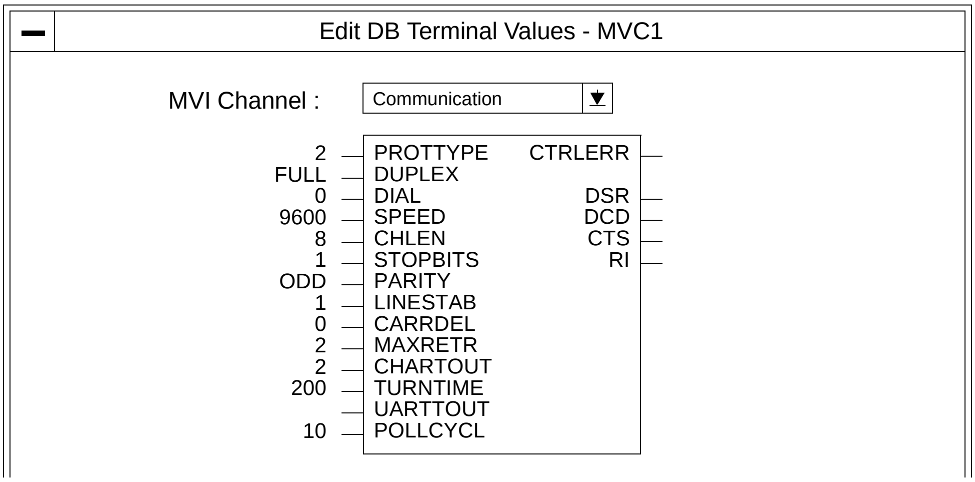
Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MVCx	–	Unique element **NAME**.	Max. 20 characters
ACT	user	1	–	Element is: 0=spare 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NET	user	1	–	**NET**work number of MVI channel.	Range 1–9. Not allowed to change on-line.
NODE	user	1	–	Own **NODE** number of MVI channel.	Range 1–254. Not allowed to change on-line.
MASTER	user	0	–	MVI channel in: 0=slave mode 1=**MASTER** mode	Not allowed to change on-line.
TIMESYNC	user	NONE	–	**TIME SYNC**hronization. Values: NONE, MASTER, SLAVE	–
ERR	system	–	B(r)	**ERR**or flag.	–

Communication



Edit DB Terminal Values - MVC1

MVI Channel : Communication

2	PROTTYPE	CTRLERR
FULL	DUPLEX	
0	DIAL	DSR
9600	SPEED	DCD
8	CHLEN	CTS
1	STOPBITS	RI
ODD	PARITY	
1	LINESTAB	
0	CARRDEL	
2	MAXRETR	
2	CHARTOUT	
200	TURNTIME	
	UARTTOUT	
10	POLLCYCL	

Terminal Description, Communication

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
PROTTYPE	user	2	–	**PROT**ocol **TYPE** (ASCII, binary, checksum), 1=RCOM, 2=RCOM+, 3=MODBUS RTU, 4=MODBUS ASCII, 8=Siemens 3964(R)	Range 1–255

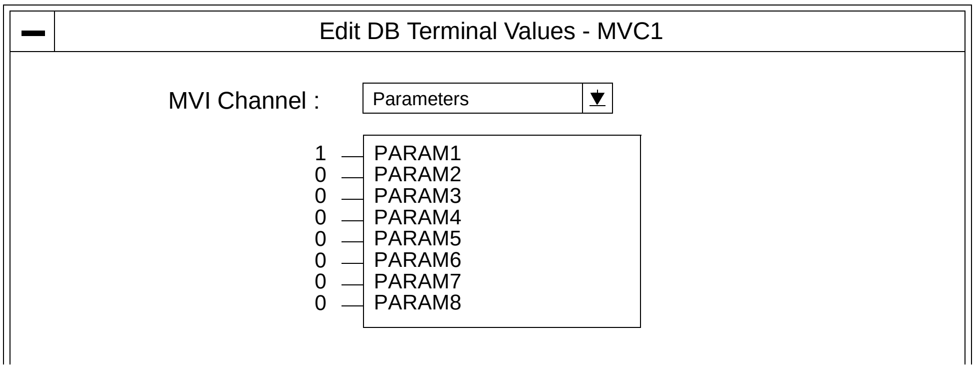
Terminal Description, Communication (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
DUPLEX	user	FULL	–	**DUPLEX** mode, concerns modem signals between MVI channel and modem. Values: FULL, HALF, HALF (DCD IGNORED)	–
DIAL	user	0	–	**DIAL**ling. 0=disabled (used for private line) 1=enabled (used for dial line)	–
SPEED	user	9600	–	Transmission **SPEED** of communication in bits/second. Values: 150, 300, 600, 1200, 2400, 4800, 9600, 19200	–
CHLEN	user	8	–	**CH**aracter **LEN**gth in bits. Values: 7, 8	–
STOPBITS	user	1	–	**STOP BITS**. Values: 1, 1.5, 2	–
PARITY	user	ODD	–	**PARITY**. Values: NONE, ODD, EVEN (for RCOM, others), EVEN (for Siemens 3964(R), MODBUS)	–
LINESTAB	user	1	–	**LINE STAB**ilization time. Number of characters to allow the carrier wave to stabilize before transmission of the first character.	RCOM, MODBUS: 0–15, Siemens 3964(R), others: 0–255
CARRDEL	user	0	–	**CARR**ier **DEL**ay. Number of characters to wait after transmission of the last character before deactivating RTS.	RCOM, MODBUS: 0–15, Siemens 3964(R), others: 0–255
MAXRETR	user	2	–	**MAX**imum number of **RETR**ansmissions before line is considered broken.	RCOM, MODBUS: 0–20, Siemens 3964(R), others: 0–200
CHARTOUT	user	2	–	**CHAR**acter **T**ime-**OUT**.	RCOM, MODBUS: 0–15, Siemens 3964(R), others: 0–255
TURNTIME	user	200	–	**TURN** around **TIME** in milliseconds. Assumed time for telegram processing in slave mode depending only on system load. Total time to wait for response is: TURNTIME + time for telegram transmission.	Range 10–20000 in steps of 10.
UARTTOUT	user	1	–	**UART** transmission **T**ime-**OUT**. Maximum number of characters for the controller to wait for a DCD before aborting the transmission (only used if DUPLEX=HALF).	Range 0–15
POLLCYCL	user	10	–	Maximum time between two **POLL**ing **CYCL**es in seconds.	RCOM, MODBUS: 0–255, Siemens 3964(R): 0–770, Others: 0–1500

Terminal Description, Communication (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
CTRLERR	system	–	B(r)	Indicating any (**C**on**TR**o**L**) **ERR**or in the modem interface.	–
DSR	system	–	B(r)	Modem signal **D**ata **S**et **R**eady.	–
DCD	system	–	B(r)	Modem signal **D**ata **C**arrier **D**etect.	–
CTS	system	–	B(r)	Modem signal **C**lear **T**o **S**end.	–
RI	system	–	B(r)	Modem signal **R**ing **I**ndicator.	–

Parameters


Edit DB Terminal Values - MVC1

MVI Channel : Parameters

1 PARAM1
0 PARAM2
0 PARAM3
0 PARAM4
0 PARAM5
0 PARAM6
0 PARAM7
0 PARAM8

Terminal Description, Parameters

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
PARAM1	user	1	–	Protocol **PARAM**eter **1**. RCOM: number of preambles.	RCOM: 1–max. IL, Siemens 3964(R), MODBUS: 0–1, Others: IL
PARAM2	user	0	–	Protocol **PARAM**eter **2**. RCOM: Time in seconds before hang-up in case no data is transmitted. This time is also used for dial-up waiting for answer.	RCOM: 0–max. IL, Siemens 3964(R): 0–1, MODBUS, others: IL
PARAM3	user	0	–	Protocol **PARAM**eter **3**. RCOM: disconnect time.	RCOM: 0–max. IL, Siemens 3964(R), MODBUS, others: IL
PARAM4	user	0	–	Protocol **PARAM**eter **4**. RCOM: max. number of polls per polling cycle.	RCOM: -1–max. IL, Siemens 3964(R), MODBUS, others: IL

Terminal Description, Parameters (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
PARAM5	user	0	–	Protocol **PARAM**eter **5**. RCOM: Clock setting mode (used only in master mode). 0=clock synchronization only on execute command from application (clock sync. command). 1=cyclic clock synchronization (only for private lines). 2=cyclic clock synchronization and after restart of a slave node (only for private lines). 3=clock synchronization after connection of a dial-up line. 4=clock synchronization before hang-up of a dial-up line.	RCOM: 0–4, Siemens 3964(R), MODBUS, others: IL
PARAM6	user	0	–	Protocol **PARAM**eter **6**. RCOM: – Master mode: In case of clock setting modes (PARAM5) 1 and 2: cycle time of clock setting. – Slave mode: Interval between time synchronizations from master.	RCOM: 0–max. IL, Siemens 3964(R), MODBUS, others: IL
PARAM7	user	0	–	Protocol **PARAM**eter **7**. RCOM: Maximum number of recalls before trying next phone number.	RCOM: 0–max. IL, Siemens 3964(R), MODBUS, others: IL
PARAM8	user	0	–	Protocol **PARAM**eter **8**. RCOM: Poll data reception time-out time in seconds (only for MASTER=1).	RCOM: 0–max. IL, Siemens 3964(R), MODBUS, others: IL

MVI Node MVINODE

Summary

Each node included in a MVI network link is represented by a data base element of type MVI Node.

The element MVI Node specifies:

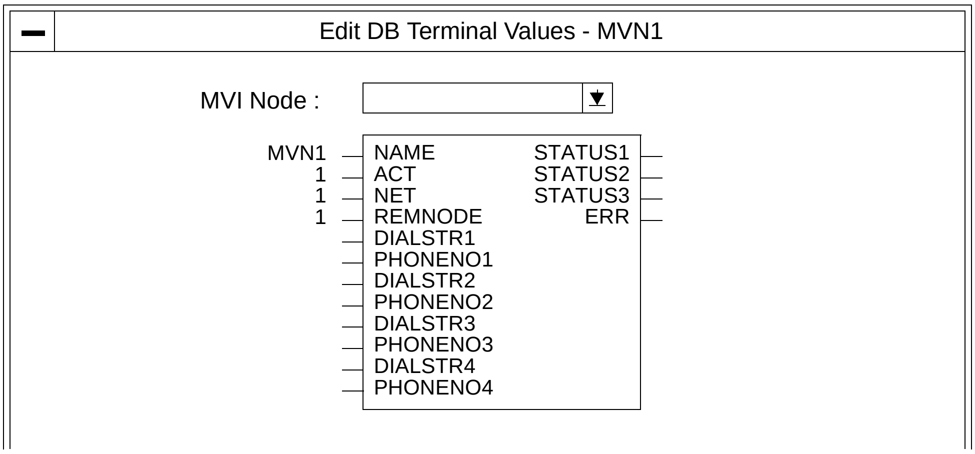
1. In master mode

- One slave node connected to the MVI channel
- The status words 1–3 for this slave node
- One phone number and one dial string for this slave node

2. In slave mode

- The own status in status word 1
- Up to 4 phone numbers and dial strings for the master

The phone numbers are used only if master and slave nodes are connected via dial line. The master phone number in the slave node is used to dial the master in case of alarm. For redundancy reasons up to 4 numbers can be given.



Edit DB Terminal Values - MVN1

MVI Node :

Value	Input	Output
MVN1	NAME	STATUS1
1	ACT	STATUS2
1	NET	STATUS3
1	REMNODE	ERR
	DIALSTR1	
	PHONENO1	
	DIALSTR2	
	PHONENO2	
	DIALSTR3	
	PHONENO3	
	DIALSTR4	
	PHONENO4	

Terminal Description

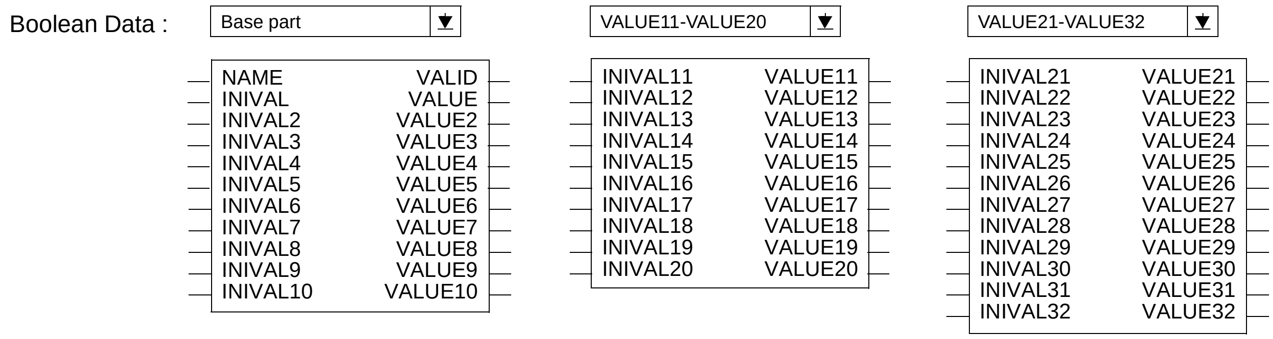
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MVNx	–	Unique element **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=spare 1=**ACT**ive	–
NET	user	1	–	MVI **NET**work number.	Not allowed to change on-line.
REMNODE	user	1	–	**REM**ote **NODE** number. In master node: node no. of slave. In slave node: node no. of master.	Range 1–254
DIALSTR1	user		–	**DIAL STRi**ng **1** for modem.	Max. 20 characters.
PHONENO1	user		–	**PHONE N**umber **1** for MVI master/slave including area number.	Max. 20 characters.
DIALSTR2	user		–	**DIAL STRi**ng **2** for modem.	Max. 20 characters.
PHONENO2	user		–	**PHONE N**umber **2** for MVI master/slave including area number.	Max. 20 characters.
DIALSTR3	user		–	**DIAL STRi**ng **3** for modem.	Max. 20 characters.
PHONENO3	user		–	**PHONE N**umber **3** for MVI master/slave including area number.	Max. 20 characters.
DIALSTR4	user		–	**DIAL STRi**ng **4** for modem.	Max. 20 characters.
PHONENO4	user		–	**PHONE N**umber **4** for MVI master/slave including area number.	Max. 20 characters.
STATUS1	system	–	IL(r)	MVI **STATUS** word **1**.	–
STATUS2	system	–	IL(r)	MVI **STATUS** word **2**.	–
STATUS3	system	–	IL(r)	MVI **STATUS** word **3**.	–
ERR	system	–	B(r)	**ERR**or flag.	–

Boolean Param PARDAT(B)

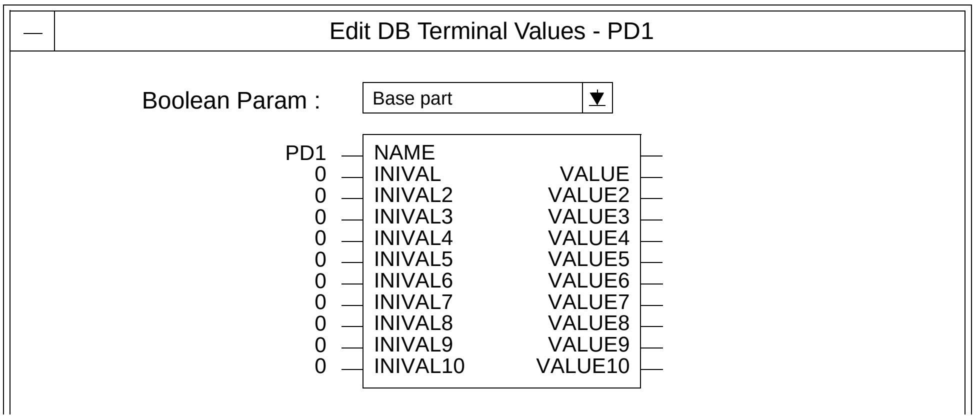
Summary

The PARDAT(B) data base element holds 32 packed boolean data values. Each data value is given an initial value. A name is given for the complete element.

Overview



Base part



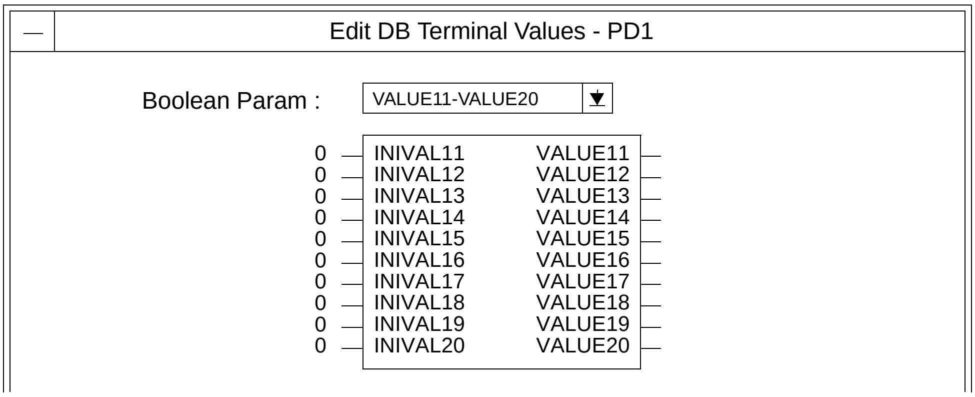
Boolean Param : Base part

PD1 — NAME
0 — INIVAL VALUE —
0 — INIVAL2 VALUE2 —
0 — INIVAL3 VALUE3 —
0 — INIVAL4 VALUE4 —
0 — INIVAL5 VALUE5 —
0 — INIVAL6 VALUE6 —
0 — INIVAL7 VALUE7 —
0 — INIVAL8 VALUE8 —
0 — INIVAL9 VALUE9 —
0 — INIVAL10 VALUE10 —

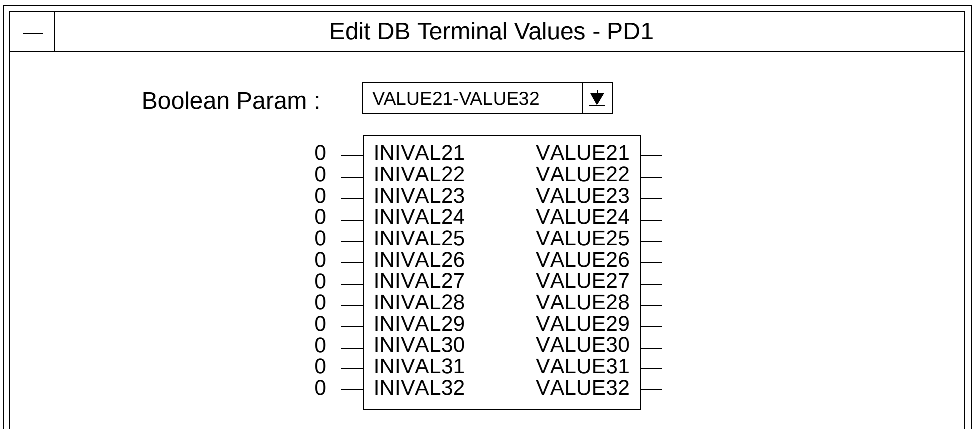
Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIVAL	user	0	–	**INI**tial **VAL**ue.	–
VALUE	system	–	B(r/w)	Boolean **VALUE**.	–
INIVAL2	user	0	–	**INI**tial **VAL**ue.	–
VALUE2	system	–	B(r/w)	Boolean **VALUE**.	–
: : INIVAL10	user	0	–	**INI**tial **VAL**ue.	–
VALUE10	system	–	B(r/w)	Boolean **VALUE**.	–

VALUE11-VALUE20



VALUE21-VALUE32



0	INIVAL21	VALUE21	
0	INIVAL22	VALUE22	
0	INIVAL23	VALUE23	
0	INIVAL24	VALUE24	
0	INIVAL25	VALUE25	
0	INIVAL26	VALUE26	
0	INIVAL27	VALUE27	
0	INIVAL28	VALUE28	
0	INIVAL29	VALUE29	
0	INIVAL30	VALUE30	
0	INIVAL31	VALUE31	
0	INIVAL32	VALUE32	

Terminal Description, VALUE11-32

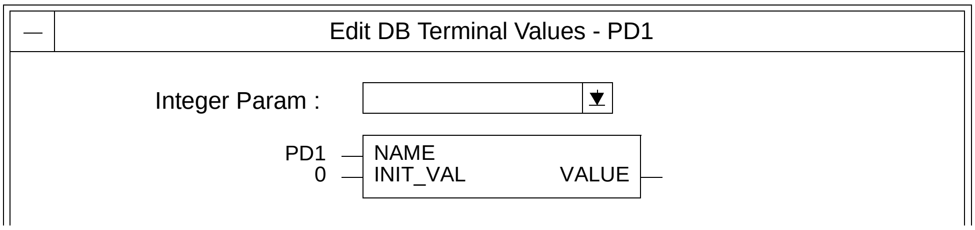
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
INIVAL11	user	0	–	**INI**tial **VAL**ue.	–
VALUE11	system	–	B(r/w)	Boolean **VALUE**.	–
INIVAL12	user	0	–	**INI**tial **VAL**ue.	–
VALUE12	system	–	B(r/w)	Boolean **VALUE**.	–
: : INIVAL32	user	0	–	**INI**tial **VAL**ue.	–
VALUE32	system	–	B(r/w)	Boolean **VALUE**.	–

Integer Param

PARDAT(I)

Summary

The PARDAT(I) data base element holds one 16 bit integer data value. The data value is given a name and an initial value.



Edit DB Terminal Values - PD1

Integer Param :

PD1 — NAME
0 — INIT_VAL VALUE —

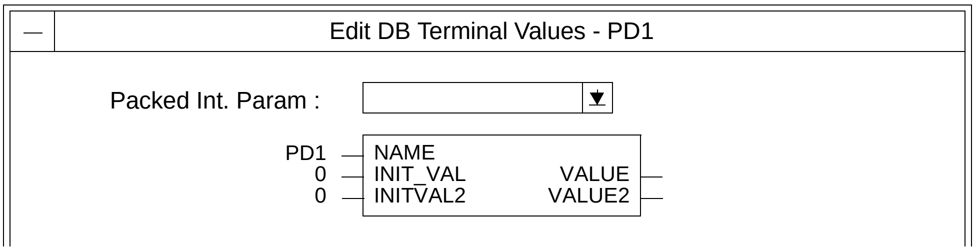
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–

Packed Int. Param PARDAT(II)

Summary

The PARDAT(II) data base element holds two 16 bit integer data values. The data values are given a name and an initial value.



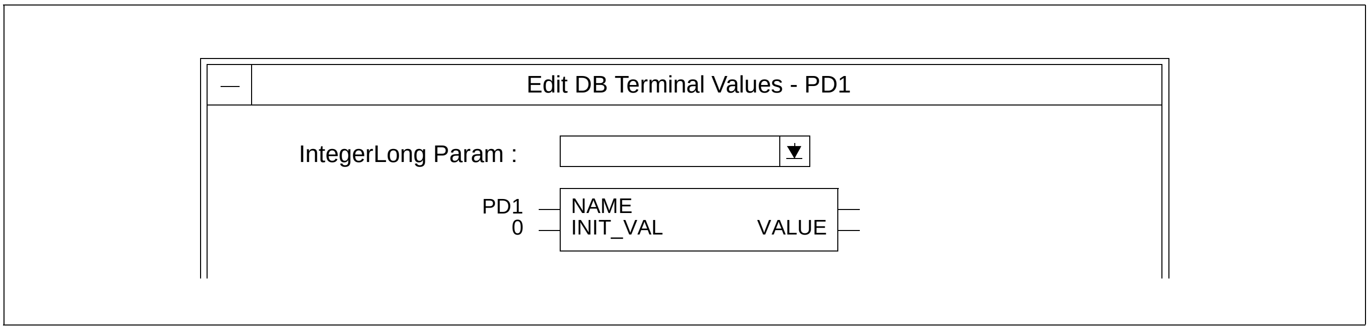
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
INITVAL2	user	0	–	**INIT**ial **VAL**ue **2**.	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–
VALUE2	system	–	I(r/w)	**VALUE 2** of type Integer.	–

IntegerLong Param PARDAT(IL)

Summary

The PARDAT(IL) data base element holds one 32 bit integer data value. The data value is given a name and an initial value.



Edit DB Terminal Values - PD1

IntegerLong Param :

PD1 — NAME
0 — INIT_VAL

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

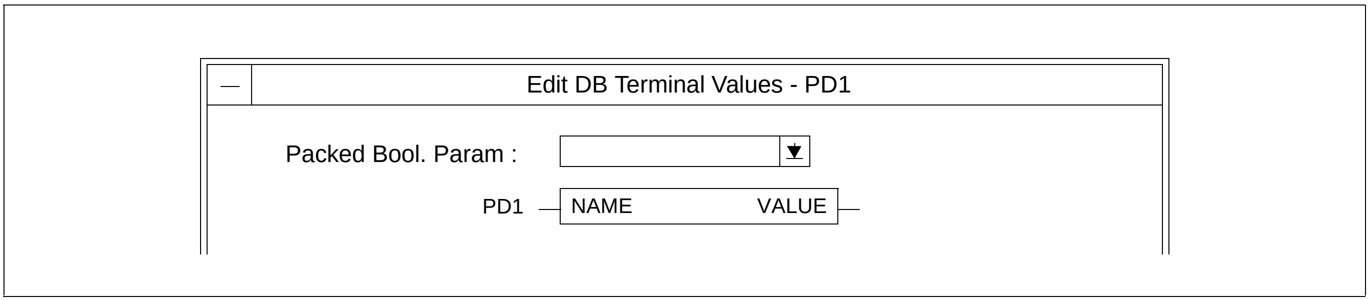
Packed Bool. Param PARDAT(NB)

Summary

The PARDAT(NB) data base element holds a data value representing 32 bit values.

The Engineering Station will create:

- 1 data base element of type Packed Bool. Param.
- 32 data base elements of type Boolean Value.



Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

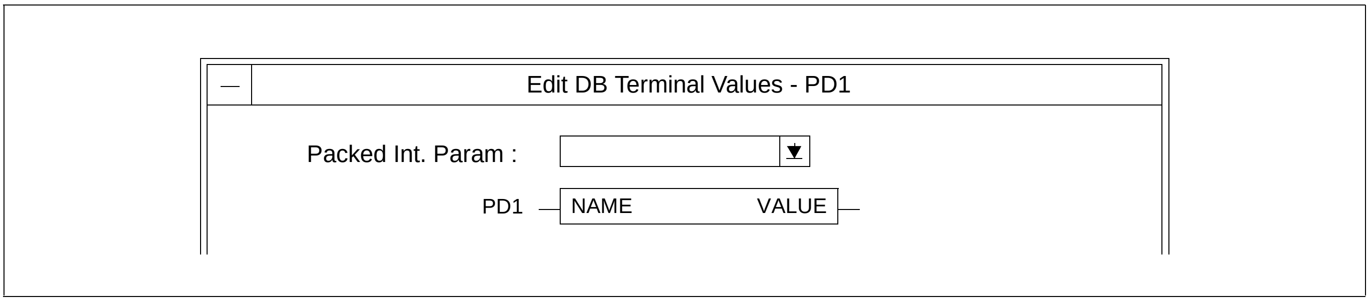
Packed Int. Param PARDAT(NI)

Summary

The PARDAT(NI) data base element holds a data value representing two 16 bit integer values.

The Engineering Station will create:

- 1 data base element of type Packed Int. Param.
- 2 data base elements of type Integer Value.



Edit DB Terminal Values - PD1

Packed Int. Param :

PD1 NAME VALUE

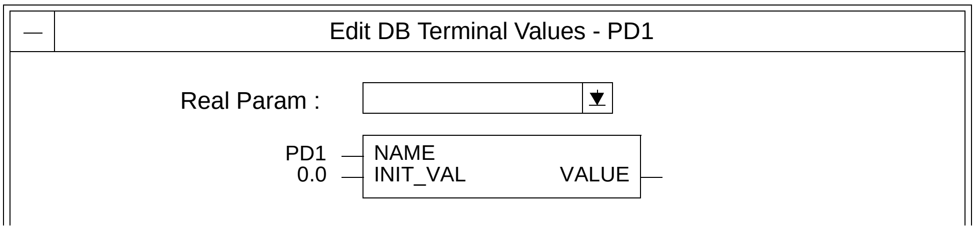
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

Real Param PARDAT(R)

Summary

The PARDAT(R) data base element holds one real data value. The data value is given a name and an initial value.



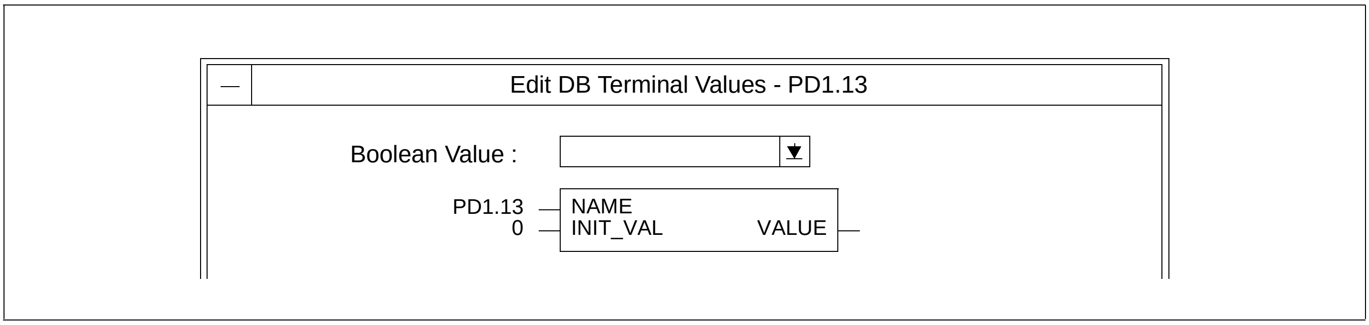
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0.0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	R(r/w)	**VALUE** of type Real.	–

Boolean Value PARDATS(NB)

Summary

The PARDATS(NB) data base element holds one boolean data value. It is subordinate to the PARDAT(NB) data base element.



Edit DB Terminal Values - PD1.13

Boolean Value :

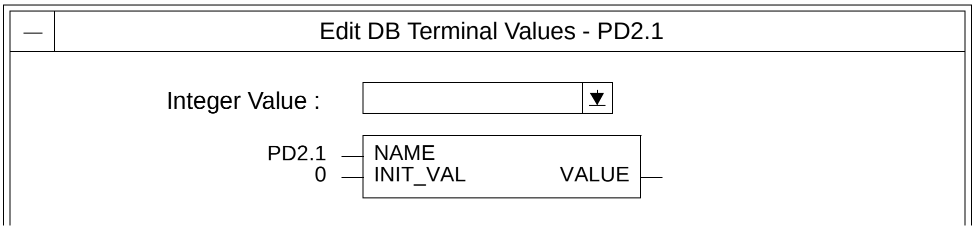
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx.y	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	B(r/w)	**VALUE** of type Boolean.	–

Integer Value PARDATS(NI)

Summary

The PARDATS(NI) data base element holds one 16 bit integer data value. It is subordinate to the PARDAT(NI) data base element.



Edit DB Terminal Values - PD2.1

Integer Value :

PD2.1 — NAME
0 — INIT_VAL VALUE —

Terminal Description

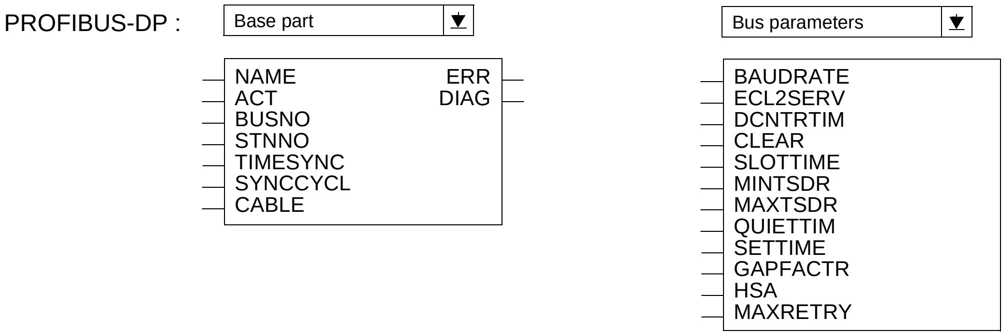
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx.y	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	B(r/w)	**VALUE** of type Integer.	–

PROFIBUS-DP PB

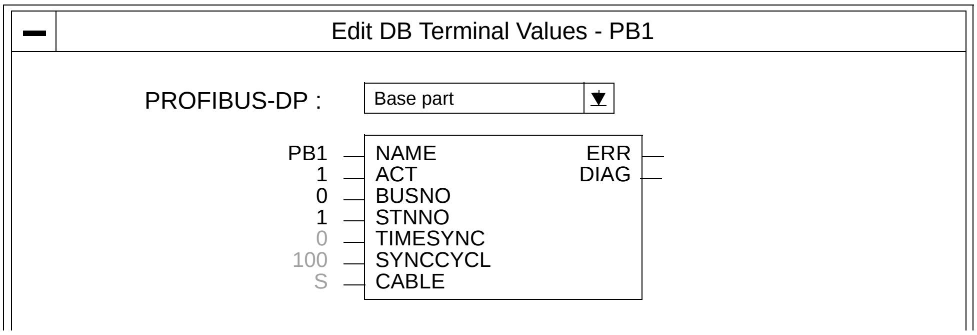
Summary

The PROFIBUS-DP data base element specifies the interface to PROFIBUS-DP. The element contains configuration data as well as diagnostic information.

Overview



Base part



PB1 NAME
1 ACT
0 BUSNO
1 STNNO
0 TIMESYNC
100 SYNCCYCL
S CABLE

Terminal Description, Base part

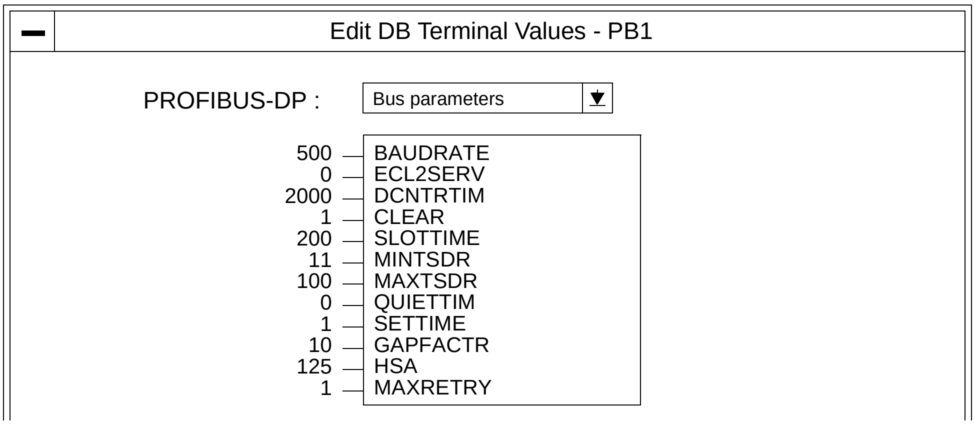
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PBx	–	Unique module **NAME**.	Max. 20 characters.
ACT	user	1	–	The DB element is: 0=spare 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BUSNO	user	0	–	Unique **BUS N**umber for this fieldbus.	Range 0–255(1)
STNNO	user	1	–	**ST**atio**N N**umber representing the Controller on the fieldbus.	Range 0–125
TIMESYNC	predef	0	–	Send a **TIME SYNC**hronization message.	For future use.
SYNCCYCL	predef	100	–	**SYNC**hronization **CYCL**e for time synchronization message.	For future use
CABLE	predef	S	–	**CABLE** connection. S = Single, R = Redundant	For future use.
ERR	system	0	B(r)	**ERR**or flag indicating hardware or configuration error.	–
DIAG	system	0	B(r)	**DIAG**nostic changed sum flag for all PROFIBUS-DP stations (sum of all PBS DIAG flags).	–

(1) BUS number 0 cannot be used in conjunction with STATION number 0.

Bus parameters



Edit DB Terminal Values - PB1

PROFIBUS-DP : Bus parameters

500 BAUDRATE
0 ECL2SERV
2000 DCNTRTIM
1 CLEAR
200 SLOTTIME
11 MINTSDR
100 MAXTSDR
0 QUIETTIM
1 SETTIME
10 GAPFACTR
125 HSA
1 MAXRETRY

Terminal Description, Bus parameters

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BAUDRATE	user	500	–	**BAUDRATE** of PROFIBUS network in kilobits per second (kbit/sec). Values: 9.6, 19.2, 93.75, 187.5, 500, 1500, 3000, 6000, 12000.	May change other terminal values, see table below.

Terminal Description, Bus parameters (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ECL2SERV	user	0	–	1=**E**nable **CL**ass **2 SERV**er access 0=disable class 2 server access	Allows a PROFIBUS-DP master class 2 to access this master.
DCNTRTIM	user	2000	–	**D**ata **C**o**NTR**ol **TIM**e in milliseconds. Time-out supervision of master – slave dialog.	Range 0–65535(1)
CLEAR	user	0	–	If data exchange fails 1=set output of all PROFIBUS-DP slaves to 0 (**CLEAR**) 0=do not change outputs	Value 1 not supported in this version.
SLOTTIME	user	200	–	**SLOTTIME** T_{SL}. The maximum time a PROFIBUS-DP master must wait for a transaction response.	Range 0–65535 T_{BIT}. Value may change if terminal BAUDRATE is changed. See table below.
MINTSDR	user	11	–	**MIN** $\mathbf{T_{SDR}}$. Specifies the minimum time a slave must wait before it may respond.	Range 0–65535 T_{BIT}.
MAXTSDR	user	100	–	**MAX** $\mathbf{T_{SDR}}$. Specifies the maximum time after which a slave must respond.	Range 0–65535 T_{BIT}. Value may change if terminal BAUDRATE is changed. See table below.
QUIETTIM	user	0	–	**QUIETTIM**e T_{QUI}. Transmitter fall time.	Range 0–255 T_{BIT}. Value may change if terminal BAUDRATE is changed. See table below.
SETTIME	user	1	–	**SET**up **TIME** T_{SET}. Time between event and reaction.	Range 0–255 T_{BIT}. Value may change if terminal BAUDRATE is changed. See table below.
GAPFACTR	user	10	–	**GAP FACT**o**R**. Number of token rounds between GAP maintenance cycles.	Range 0–100
HSA	user	125	–	**H**ighest **S**tation (slave) **A**ddress configured on this bus.	Range 2–125
MAXRETRY	user	1	–	**MAXi**mum number of times to **RETRY** transmission.	Range 1–8. Value may change if terminal BAUDRATE is changed. See table below.

(1) Rule according to EN 50170: DCNTRTIM >= 6 * TWD. See DB Element PBS, terminals WDFACT1 and WDFACT2.

The value of the following terminals changes to the specified default if terminal BAUDRATE is changed:

Defaults depending on BAUDRATE

BAUDRATE	SLOTTIME	MAXTSDR	QUIETTIM	SETTIME	MAXRETRY
9.6	100	60	0	1	1
19.2	100	60	0	1	1
93.75	100	60	0	1	1
187.5	100	60	0	1	1
500	200	100	0	1	1
1500	300	150	0	1	1
3000	400	250	3	4	2
6000	600	450	6	8	3
12000	1000	800	9	16	4

Standard Drive PB_ACS600

Summary

The PB_ACS600 data base element specifies a Standard Drive hardware module on the module bus. The Engineering Station will create 1 data base element of type Standard Drive.

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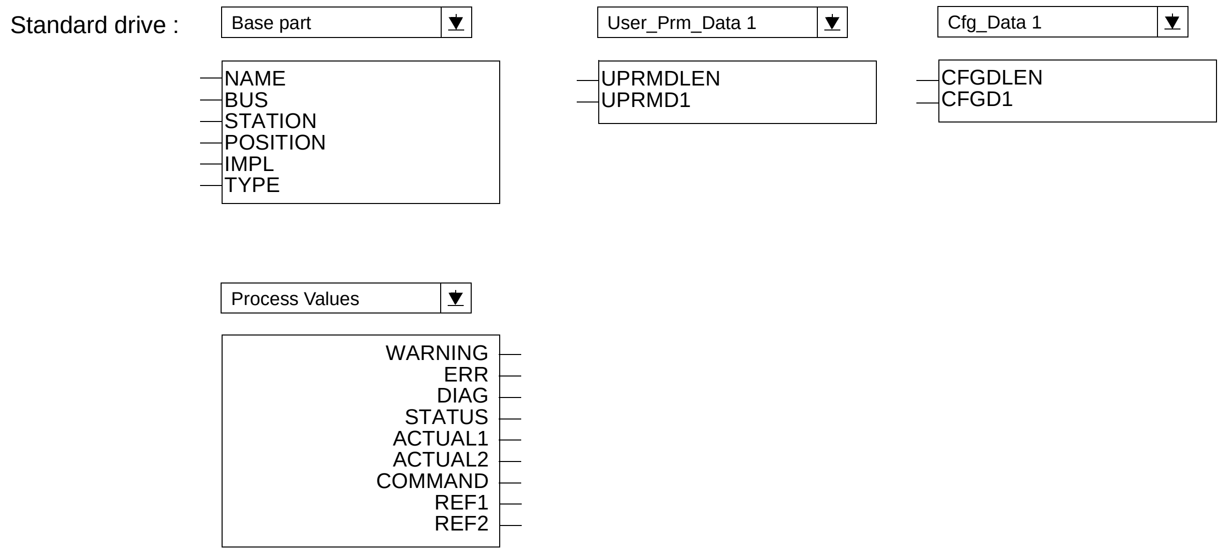
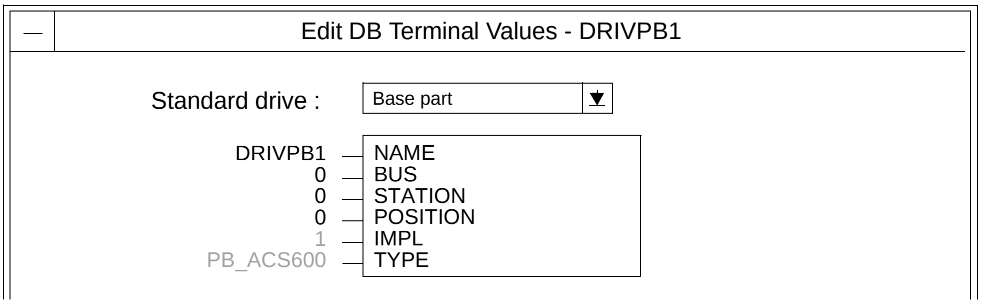
Overview



Base part


Edit DB Terminal Values - DRIVPB1

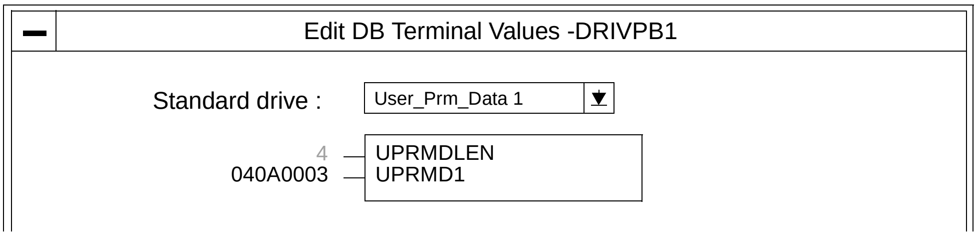
Standard drive : Base part

DRIVPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_ACS600 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DRIVPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_ACS 600	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values -DRIVPB1

Standard drive : User_Prm_Data 1

4 — UPRMDLEN
040A0003 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	4	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	040A0003	–	**U**ser **P**a**R**a**M**eter **D**ata, 4 bytes.	Hexadecimal number. See Table 28. For parameter definitions see Table 27

Table 27. Parameter Definitions

Configuration Parameter	**Values**	**Location**	**Associated to**
Control mode	3 = Control via PROFIBUS 4 = Local	Byte 4, bit 0–2	Module

Table 28 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked bold.

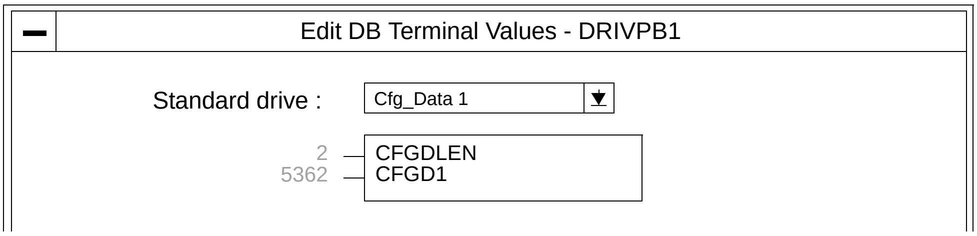
Table 28. User Parameter Definitions, Description of Bytes

Byte Number	**UPRMD**	**OSP Value Channel**	**Associated to**
1–3	040A00	–	Module
4	03	Control via PROFIBUS	Module
	04	Local	

NOTE

Do not use other values for UPRMD than stated in Table 28.

Cfg_Data 1



Edit DB Terminal Values - DRIVPB1

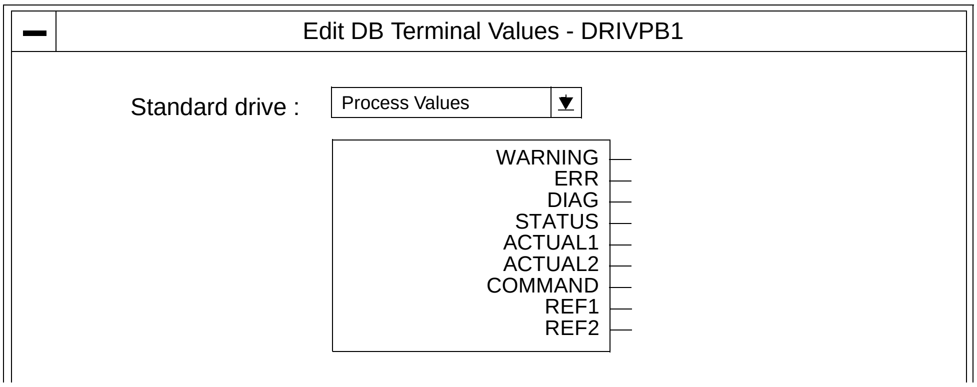
Standard drive : Cfg_Data 1

2 — CFGDLEN
5362 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**FiG** **D**ata **LEN**gth. Predefined value.	–
CFGD1	predef	5362	–	**C**on**FiG**uration **D**ata, 2bytes.Predefined value.	–

Process Values



Edit DB Terminal Values - DRIVPB1

Standard drive : Process Values

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction
STATUS	system	–	I(r)	**STATUS**	See table
ACTUAL1	system	–	I(r)	**ACTUAL 1**	–
ACTUAL2	system	–	I(r)	**ACTUAL 2**	–
COMMAND	system	–	I(r/w)	**COMMAND** word.	–
REF1	system	–	I(r/w)	**REF**erence #**1**.	–
REF2	system	–	I(r/w)	**REF**erence #**2**.	–

Table 29. Parameter Definition

Parameter	**Bit**		**Value**	**Associated to**
Status	0	0	Initialization not OK	Module
		1	Ready (initialization OK)	
	1	0	Not ready (stop 1)	
		1	Ready (ready to start)	
	2	0	Not ready (run disable)	
		1	Ready for reference, or running	
	3	0	No fault	
		1	Fault condition (fault)	
	4	0	Coast to stop (stop 2) ON	
		1	Coast to stop (stop 2) OFF	
	5	0	“Stop according to selected stop type” (stop 3) ON	
		1	“Stop according to selected stop type” (stop 3) OFF	
	6	0	Drive not ready	
		1	Drive disable	
	7	0	No warning	
		1	Warning condition	
	8	0	Actual value differs from reference value	
		1	Actual value equals reference value	
	9	0	ACS600 control location LOCAL	
		1	ACS600 control location REMOTE	
	10	0	Actual frequency value is within supervision limit	
		1	Actual frequency limit is equal to or is greater than supervision limit	
	11	0	External reference 1 selected	
		1	External reference 2 selected	
	12–14		Unused	
	15	0	DDCS communication (ACS600 – FCI) OK	
		1	Error(s) in DDCS communication. Note: Status word not updated	

Table 29. Parameter Definition (Continued)

Parameter	**Bit**		**Value**	**Associated to**
Control word	0	0	Stop according to ramp (stop 1)	Module
		1	Enter Ready to start	
	1	0	Coast to stop (stop 2)	
		1	Ready	
	2	0	Stop according to stop type selected	
		1	Ready	
	3	0	Coast to stop (run disable)	
		0→1	Start if bits 0 to 2 are ON	
	4-6	0	Stop according to stop type selected	
		1	Normal operation	
	7	0	No reset performed	
		0→1	Fault reset (enter Drive disable)	
	8, 9		Unused	
	10	0	The control and the frequency reference (from PROFIBUS-DP) are not activated. Old values are retained.	
		1	The control and the frequency reference (from PROFIBUS-DP) are activated.	
	11	0	External reference 1 selected.	
		1	External reference 2 selected.	
	12-15		Unused	

AI module PB_AI810

Summary

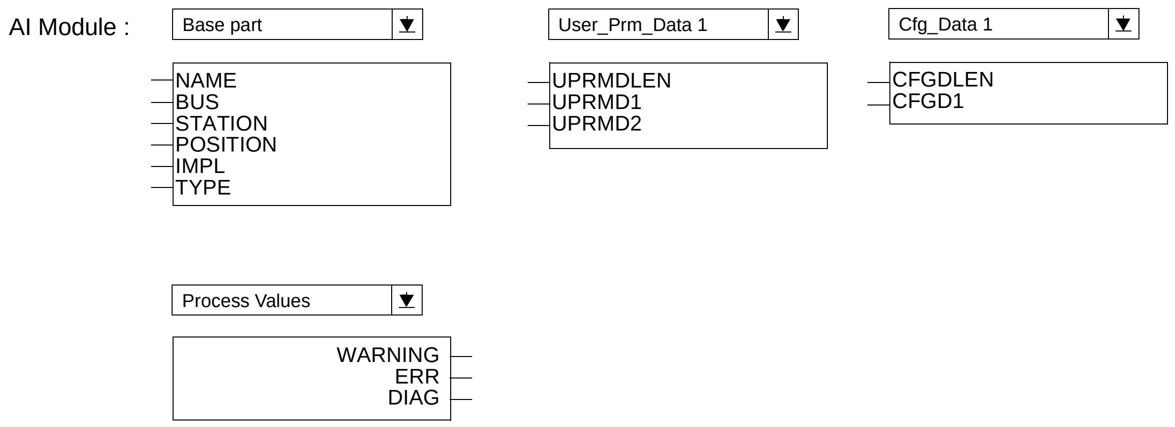
The AI module data base element specifies an Analog Input hardware module of type AI810 contained in an PROFIBUS station. The data base element is superior to the signal elements associated to the analog input channels in the module and contains diagnostic information of the I/O module. The following modules are supported:

- PB_AI810: 1 × 8 channels, 12 bit resolution, single ended. Rated isolation 50 V.

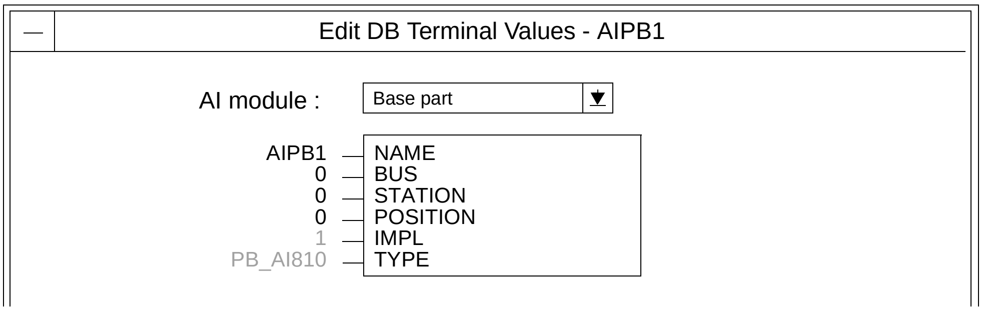
The Engineering Station will create:

- 1 data base element of type AI module
- 8 (PB_AI810S) data base elements of type Analog Input.

Overview



Base part



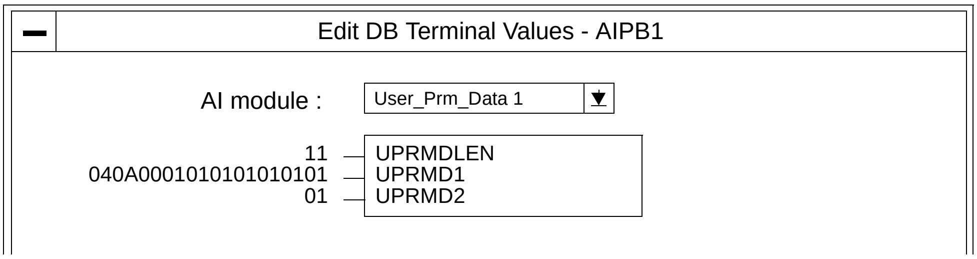
AI module : Base part

AIPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_AI810 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AIPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AI810	–	Module **TYPE** designation.	–

User_Prm_Data 1



AI module : User_Prm_Data 1

11 — UPRMDLEN
040A0001010101010101 — UPRMD1
01 — UPRMD2

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	11	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, **1**st 10 bytes.	Hexadecimal number. See Table 30 and Table 31
UPRMD2	user	01	–	**U**ser **P**a**R**a**M**eter **D**ata, 11th byte.	

(1) 040A0001010101010101

Table 30. Parameter Definition

Configuration Parameter	Values	Location	Associated to
Conversion parameter	0 = 0…20 mA **1 = 4…20 mA** 2 = 0…10 V 3 = 2…10 V 6 = 0…20 mA LL 7 = 4…20 mA LL 8 = 0…10 V LL 9 = 2…10 V LL	Byte 4, bit 0 to 4 Byte 5, bit 0 to 4 … Byte 11, bit 0 to 4	Channel 1 Channel 2 … Channel 8
Linearization code	**0 = no linearization** 1 = sqrt linearization	Byte 4, bit 5 Byte 5, bit 5 … Byte 11, bit 5	Channel 1 Channel 2 … Channel 8

Table 31 includes the hexadecimal values for configuration parameters which can be entered for each channel.

Table 31. Parameter Definition, Description of Bytes

Byte Number	UPRMD	Conversion parameter	Linearization Code	Associated to
1–3	040A00	–	–	Module

Table 31. Parameter Definition, Description of Bytes

Byte Number	UPRMD	Conversion parameter	Linearization Code	Associated to
4	00	0 to 20 mA	No linearization	Channel 1
	01	**4 to 20 mA**	**No linearization**	
	02	0 to 10	No linearization	
	03	2 to 10 V	No linearization	
	06	0 to 20 mA LL	No linearization	
	07	4 to 20 mA LL	No linearization	
	08	0 to 10 V LL	No linearization	
	09	2 to 10 V LL	No linearization	
	20	0 to 20 mA	Sqrt linearization	
	21	4 to 20 mA	Sqrt linearization	
	22	0 to 10 V	Sqrt linearization	
	23	2 to 10 V	Sqrt linearization	
	26	0 to 20 mA LL	Sqrt linearization	
	27	4 to 20 mA LL	Sqrt linearization	
	28	0 to 10 V LL	Sqrt linearization	
	29	2 to 10 V LL	Sqrt linearization	
5	See byte 4			Channel 2
6	See byte 4			Channel 3
…	…			…
11	See byte 4			Channel 11

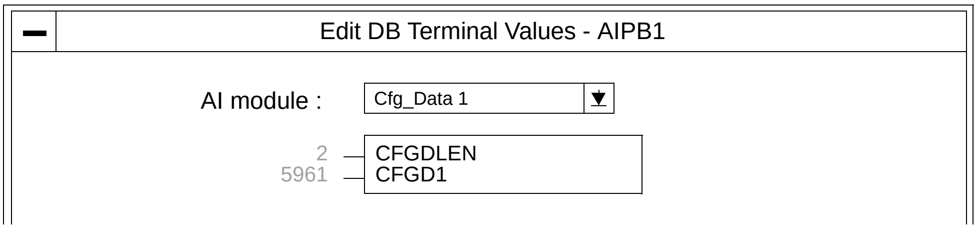
NOTE

- The default values in Table 30 and Table 31 are marked in bold face letters.
- Do not use other values for UPRMD than stated in Table 31.

About Lower Limit (LL)

The raw signal (not signal conditioned) value is always limited to the lowest value given by the signal range. This means that if the raw signal value is below this limit it will be set to the low limit value, before performing the signal conditioning.

Cfg_Data 1



Edit DB Terminal Values - AIPB1

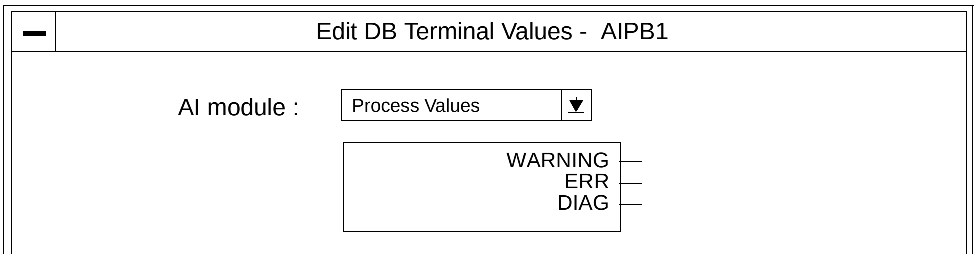
AI module : Cfg_Data 1

2 — CFGDLEN
5961 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**FiG** **D**ata **LEN**gth. Predefined value.	–
CFGD1	predef	5961	–	**C**on**F**i**G**uration **D**ata, 2bytes. Predefined value.	–

Process Values



Edit DB Terminal Values - AIPB1

AI module : Process Values

Terminal Description, Process Values

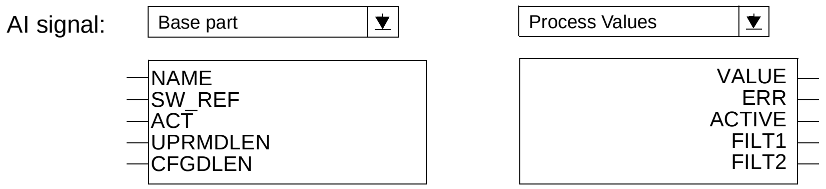
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Analog Input PB_AI810S

Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI810 hardware module.

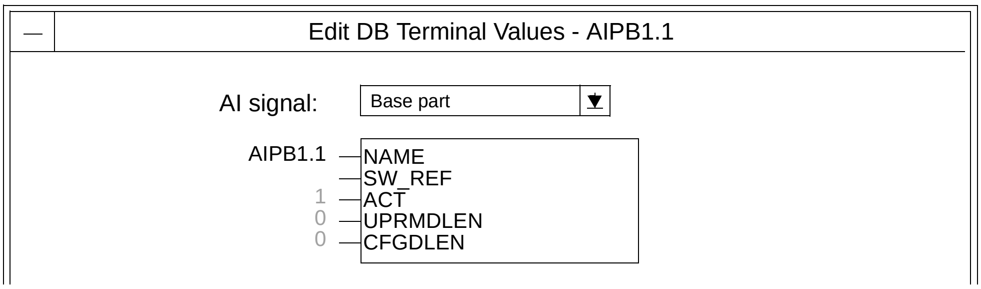
Overview



AI signal: Base part

Process Values

Base part



Edit DB Terminal Values - AIPB1.1

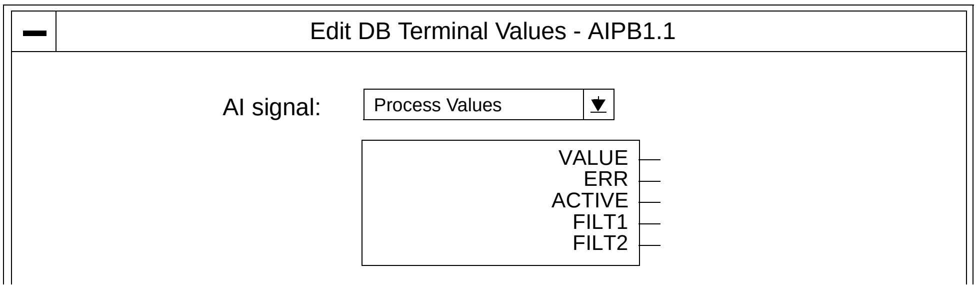
AI signal: Base part

AIPB1.1 NAME
SW_REF
1 ACT
0 UPRMDLEN
0 CFGDLEN

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values


Edit DB Terminal Values - AIPB1.1

AI signal: Process Values

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE	system	–	I(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–
FILT1	system	–	B(r/w)	**FILT**er time channel, **1**st digit.	See Table 32 and Table 33.
FILT2	system	–	B(r/w)	**FILT**er time channel, **2**nd digit.	

Table 32. Parameter Definition for PB_AI810S

Configuration Parameter	Values	Location	Associated to
Filter time channel	0 = filter off 1 = 200 ms 2 = 500 ms 3 = 2 s	FILT1, 1st bit FILT2, 2nd bit	Channel

Table 33 includes the possible settings for FILT1 and FILT2.

.

Table 33. Filter Time Settings for PB_AI810S

FILT1	**FILT2**	**Filter Time Channel**
0	0	filter off
1	0	200 ms
0	1	500 ms
1	1	2 s

AI module PB_AI820

Summary

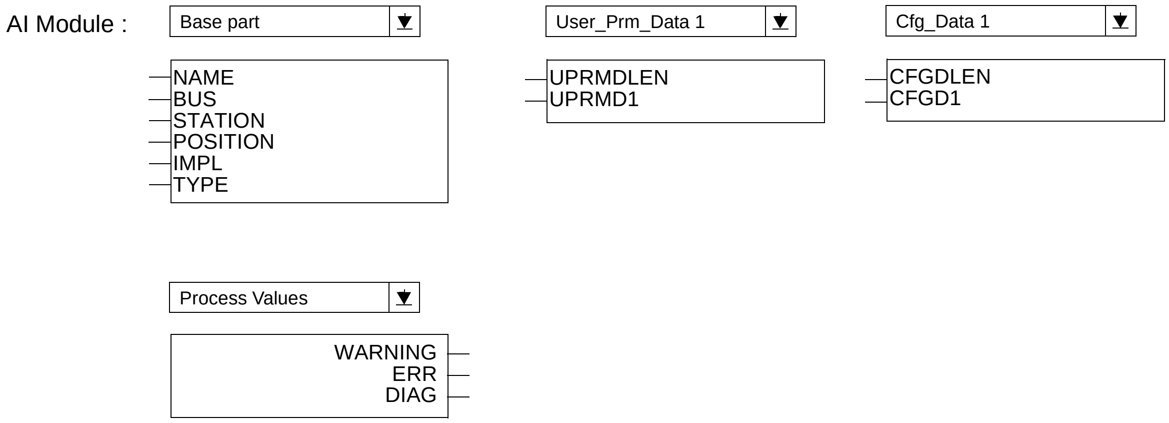
The AI module data base element specifies an Analog Input hardware module of type AI820 contained in an PROFIBUS station. The data base element is superior to the signal elements associated to the analog input channels in the module and contains diagnostic information of the I/O module. The following modules are supported:

- PB_AI820: 4 × 1 channels (differential). 12 bit plus sign. Rated isolation 50 V.

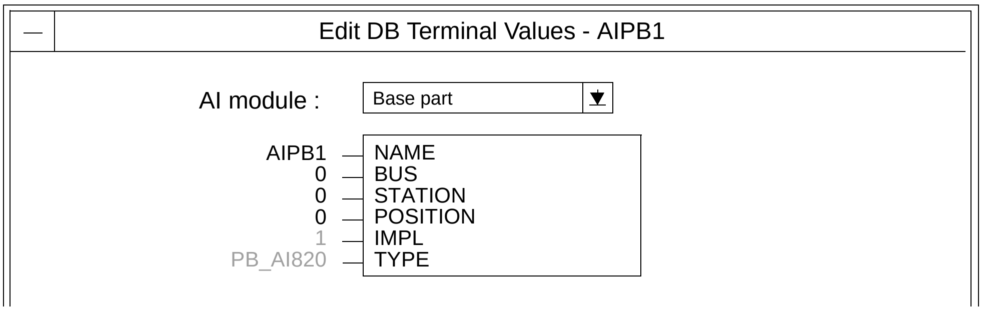
The Engineering Station will create:

- 1 data base element of type AI module
- 4 (PB_AI820S) data base elements of type Analog Input.

Overview



Base part

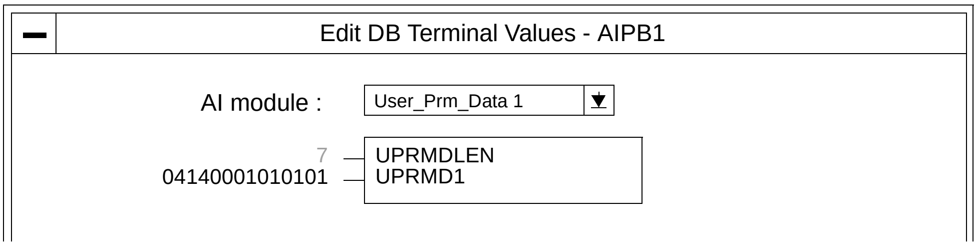


AIPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_AI820 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AIPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AI820	–	Module **TYPE** designation.	–

User_Prm_Data 1



AI module : User_Prm_Data 1

7 — UPRMDLEN
04140001010101 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
UPRMDLEN	predef	7	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, 7 bytes.	Hexadecimal number. See Table 34 and Table 35

(1) 04140001010101

Table 34. Parameter Definition for PB_AI820

Configuration Parameter	**Values**	**Location**	**Associated to**
Conversion parameter	0 = 0 to 20 mA **1 = 4 to 20 mA** 2 = 0 to 10 V 3 = 2 to 10 V 4= -20 to 20 mA 5 = -10 to 10 V 6 = 0 to 2 mA LL 7 = 4 to 20 mA LL 8 = 0 to 10 V LL 9 = 2 to 10 V LL 10 = -20 to 20 mA LL 11 = -10 to 10 V LL 12= -5 to 5 V 13 = 0 to 5 V 14 = 1 to 5 V 15 = -5 to 5 V LL 16 = 0 to 5 V LL 17 = 1 to 5 V LL	Byte 4, bit 5 Byte 5, bit 5 … Byte 11, bit 5	Channel 1 Channel 2 … Channel 8
Linearization code	0 = no linearization 1 = sqrt linearization	Byte 4, bit 0 to 4 Byte 5, bit 0 to 4 ... Byte 11, bit 0 to 4	Channel 1 Channel 2 ... Channel 8

The default values in Table 34 and Table 35 are marked in bold face letters. Table 35 includes the hexadecimal values for configuration parameters which can be entered for each channel.

Table 35. User Parameter Definition for PB_AI820, Description of Bytes

Byte Number	**UPRMD**	**Conversion Parameter**	**Linearization Code**	**Associated to**
1–3	041400	–	–	Module
4	00	0 to 20 mA	No linearization	Channel 1
	01	**4 to 20 mA**	**No linearization**	
	02	0 to 10 V	No linearization	
	03	2 to 10 V	No linearization	
	04	-20 to 20 mA	No linearization	
	05	-10 to 10 V	No linearization	
	06	0 to 20 mA LL	No linearization	
	07	4 to 20 mA LL	No linearization	
	08	0 to 10 V LL	No linearization	

Table 35. User Parameter Definition for PB_AI820, Description of Bytes (Continued)

Byte Number	**UPRMD**	**Conversion Parameter**	**Linearization Code**	**Associated to**
4 (continued)	09	2 to 10 V LL	No linearization	Channel 1 (continued)
	0A	-20 to 20 mA LL	No linearization	
	0B	-10 to 10 V LL	No linearization	
	0C	-5 to 5 V	No linearization	
	0D	0 to 5 V	No linearization	
	0E	1 to 5 V	No linearization	
	0F	-5 to 5 V LL	No linearization	
	10	0 to 5 V LL	No linearization	
	11	1 to 5 V LL	No linearization	
	20	0 to 20 mA	Sqrt linearization	
	21	4 to 20 mA	Sqrt linearization	
	22	0 to 10 V	Sqrt linearization	
	23	2 to 10 V	Sqrt linearization	
	24	-20 to 20 mA	Sqrt linearization	
	25	-10 to 10 V	Sqrt linearization	
	26	0 to 20 mA LL	Sqrt linearization	
	27	4 to 20 mA LL	Sqrt linearization	
	28	0 to 10 V LL	Sqrt linearization	
	29	2 to 10 V LL	Sqrt linearization	
	2A	-20 to 20 mA LL	Sqrt linearization	
	2B	-10 to 10 V LL	Sqrt linearization	
	2C	-5 to 5 V	Sqrt linearization	
	2D	0 to 5 V	Sqrt linearization	
	2E	1 to 5 V	Sqrt linearization	
	2F	-5 to 5 V LL	Sqrt linearization	
	30	0 to 5 V LL	Sqrt linearization	
	31	1 to 5 V LL	Sqrt linearization	
5	See byte 4			Channel 2
6	See byte 4			Channel 3
7	See byte 4			Channel 4

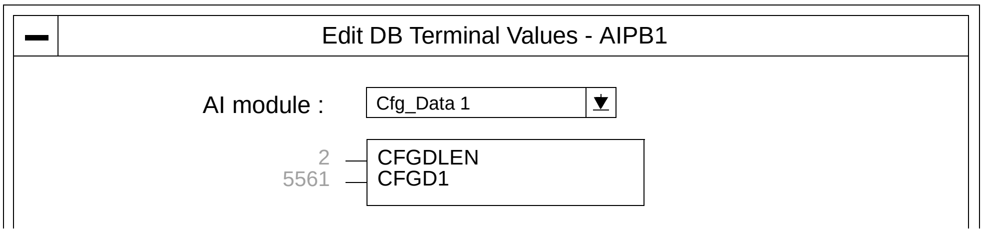
NOTE

Do not use other values for UPRMD than stated in Table 35.

About Lower Limit (LL)

The raw signal (not signal conditioned) value is always limited to the lowest value given by the signal range. This means that if the raw signal value is below this limit it will be set to the low limit value, before performing the signal conditioning.

Cfg_Data 1



Edit DB Terminal Values - AIPB1

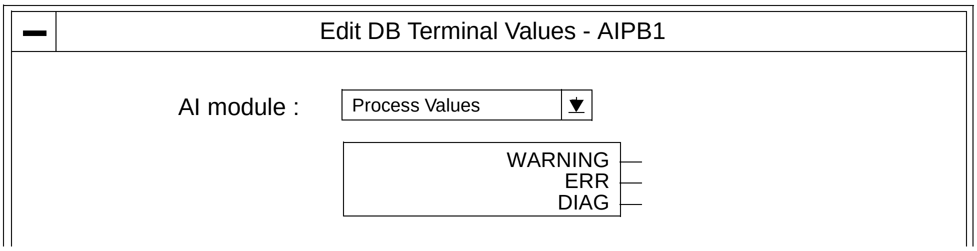
AI module : Cfg_Data 1

2 — CFGDLEN
5561 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5561	–	**C**on**F**i**G**uration **D**ata, 2bytes. Predefined value for every module.	–

Process Values



Edit DB Terminal Values - AIPB1

AI module : Process Values

WARNING
ERR
DIAG

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–

Terminal Description, Process Values

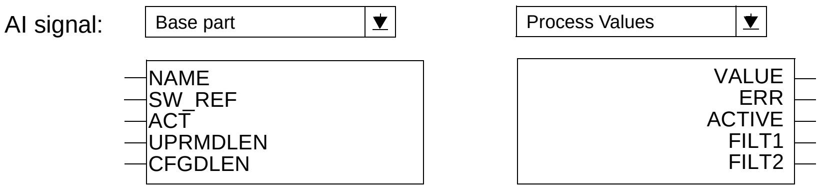
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction.

Analog Input PB_AI820S

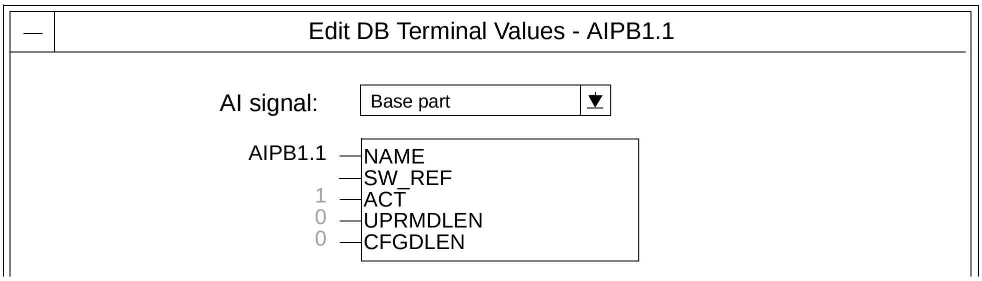
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI820 hardware module.

Overview



Base part


Edit DB Terminal Values - AIPB1.1

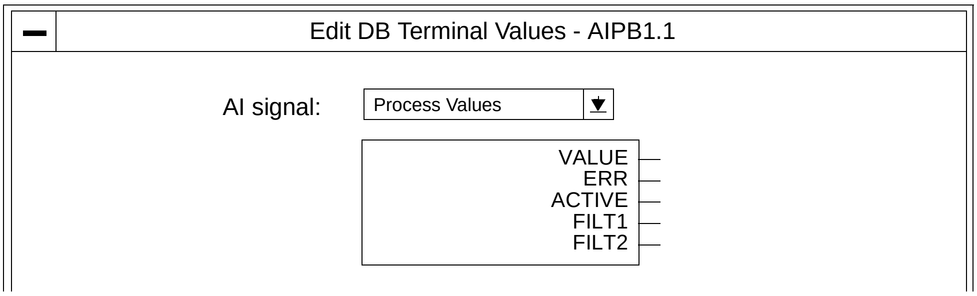
AI signal: Base part

AIPB1.1 — NAME
— SW_REF
1 — ACT
0 — UPRMDLEN
0 — CFGDLEN

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	Not used.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–

Process Values



Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE	system	–	I(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–
FILT1	system	–	B(r/w)	**FILT**er time channel **1**st digit.	See Table 36 and Table 37.
FILT2	system	–	B(r/w)	**FILT**er time channel **2**nd digit.	

Table 36. Parameter Definition for PB_AI820S

Configuration Parameter	Values	Location	Associated to
Filter time channel	0 = filter off 1 = 200 ms 2 = 500 ms 3 = 2 s	FILT1, 1st bit FILT2, 2nd bit	Channel

Table 37 includes the possible settings for FILT1 and FILT2

.

Table 37. Filter Time Settings for PB_AI820S

FILT1	FILT2	Filter Time Channel
0	0	filter off
1	0	200 ms
0	1	500 ms
1	1	2 s

RTD module PB_AI830

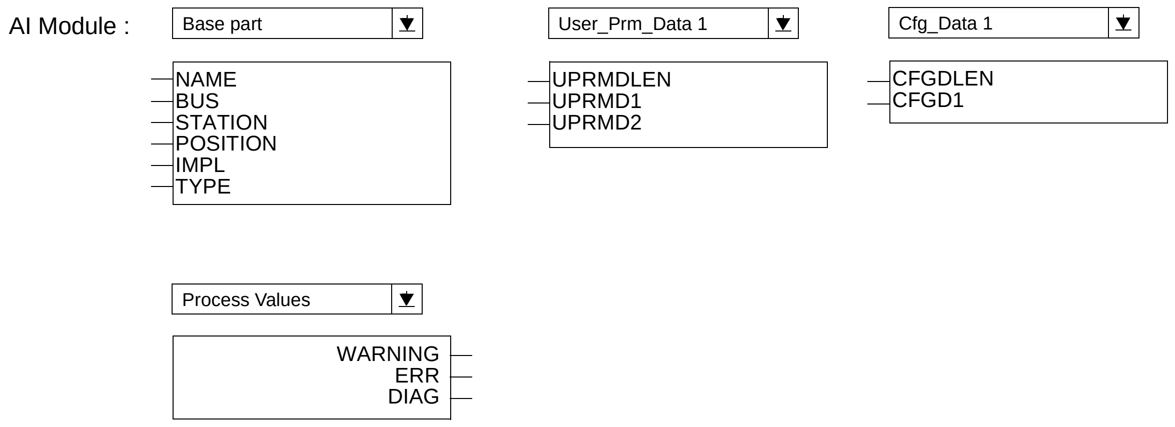
Summary

The RTD module data base element specifies an Analog Input RTD hardware module of type AI830 contained in an PROFIBUS station. The data base element is superior to the signal elements associated to the RTD input channels in the module and contains diagnostic information of the I/O module.

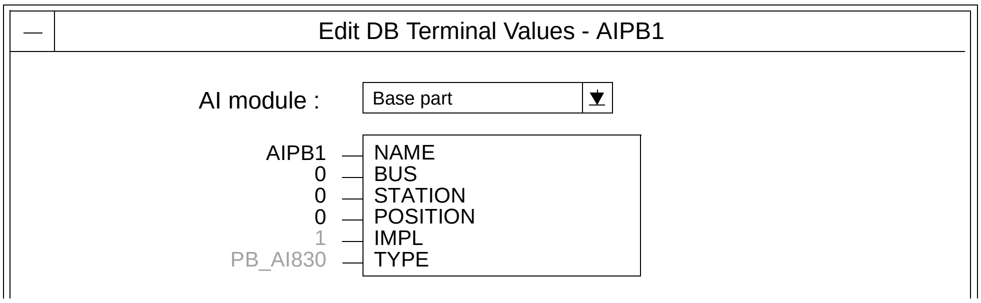
The Engineering Station will create:

- 1 data base element of type RTD module
- 8 (PB_AI830S) data base elements of type RTD Input.

Overview



Base part



Edit DB Terminal Values - AIPB1

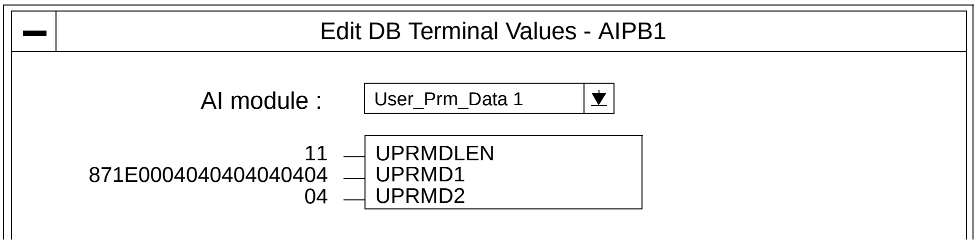
AI module : Base part

AIPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_AI830 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AIPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AI830	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values - AIPB1

AI module : User_Prm_Data 1

11 — UPRMDLEN
871E0004040404040404 — UPRMD1
04 — UPRMD2

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
UPRMDLEN	predef	11	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, **1**st 10 bytes.	Hexadecimal number. See Table 38 and Table 39
UPRMD2	user	04	–	**U**ser **P**a**R**a**M**eter **D**ata, 11th bytes.	

(1) 871E0004040404040404

Table 38. Parameter Definition for PB_AI830

Configuration Parameter	**Values**	**Location**	**Associated to**
Conversion parameter	0 = -80 to 80 °C Pt100 1 = -112 to 176 °F Pt100 2 = -200 to 250 °C Pt100 3 = -328 to 482 °F Pt100 4 = -200 to 850 °C Pt100 5 = -328 to 1562 °F Pt100 6 = -60 to 180 °C Ni100 7 = -76 to 356 °F Ni100 8 = -80 to 260 °C Ni120 9 = -112 to 500 °F Ni120 10 = -100 to 260 °C Cu10 11 = -148 to 500 °F Cu10 12 = 0 to 400 Ω resistor	Byte 4, bit 0 to 4 Byte 5, bit 0 to 4 … Byte 11, bit 0 to 4	Channel 1 Channel 2 … Channel 8
Grid frequency, A/D converter integration time	0 = 50 Hz 1 = 60 Hz	Byte 4, bit 5	Module

Table 39 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked in bold face letters.

Table 39. User Parameter Definition for PB_AI830, Description of Bytes

Byte number	UPRMD	Conversion parameter	Grid frequency	Associated to
1–3	871E00	–	–	Module
4	00	-80 to 80 °C Pt100	50 Hz	Module, channel 1
	01	-112 to 176 °F Pt100	50 Hz	
	02	-200 to 250 °C Pt100	50 Hz	
	03	-328 to 482 °F Pt100	50 Hz	
	04	**-200 to 850 °C Pt100**	**50 Hz**	
	05	-328 to 1562 °F Pt100	50 Hz	
	06	-60 to 180 °C Ni100	50 Hz	
	07	-76 to 356 °F Ni100	50 Hz	
	08	-80 to 260 °C Ni120	50 Hz	
	09	-112 to 500 °F Ni120	50 Hz	
	0A	-100 to 260 °C Cu10	50 Hz	
	0B	-148 to 500 °F Cu10	50 Hz	
	0C	0 to 400 W resistor	50 Hz	
	40	-80 to 80 °C Pt100	60 Hz	
	41	-112 to 176 °F Pt100	60 Hz	
	42	-200 to 250 °C Pt100	60 Hz	
	43	-328 to 482 °F Pt100	60 Hz	
	44	-200 to 850 °C Pt100	60 Hz	
	45	-328 to 1562 °F Pt100	60 Hz	
	46	-60 to 180 °C Ni100	60 Hz	
	47	-76 to 356 °F Ni100	60 Hz	
	48	-80 to 260 °C Ni120	60 Hz	
	49	-112 to 500 °F Ni120	60 Hz	
	4A	-100 to 260 °C Cu10	60 Hz	
	4B	-148 to 500 °F Cu10	60 Hz	
	4C	0 to 400 Ω resistor	60 Hz	

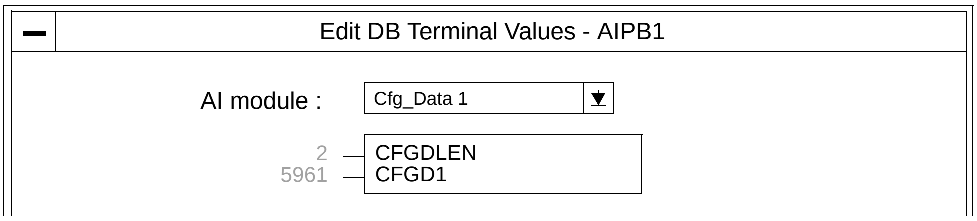
Table 39. User Parameter Definition for PB_AI830, Description of Bytes (Continued)

Byte number	UPRMD	Conversion parameter	Grid frequency	Associated to
5	00	-80 to 80 °C Pt100	–	Channel 2
	01	-112 to 176 °F Pt100	–	
	02	-200 to 250 °C Pt100	–	
	03	-328 to 482 °F Pt100	–	
	04	**-200 to 850 °C Pt100**	**–**	
	05	-328 to 1562 °F Pt100	–	
	06	-60 to 180 °C Ni100	–	
	07	-76 to 356 °F Ni100	–	
	08	-80 to 260 °C Ni120	–	
	09	-112 to 500 °F Ni120	–	
	0A	-100 to 260 °C Cu10	–	
	0B	-148 to 500 °F Cu10	–	
	0C	0 to 400 Ω resistor	–	
6	See byte 5			Channel 3
…	…	…	…	…
11	See byte 5			Channel 8

NOTE

Do not use other values for UPRMD than stated in Table 39.

Cfg_Data 1



Edit DB Terminal Values - AIPB1

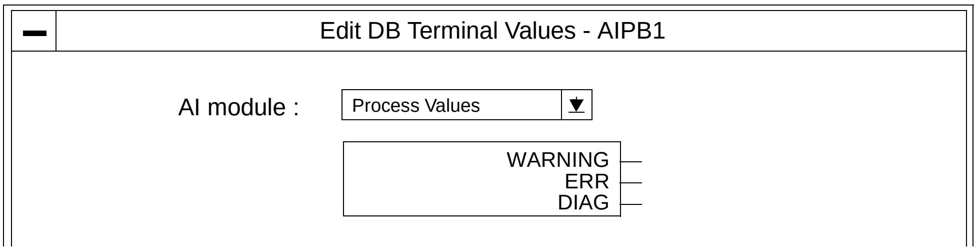
AI module : Cfg_Data 1

2 — CFGDLEN
5961 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5961	–	**C**on**F**i**G**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Terminal Description, Process Values

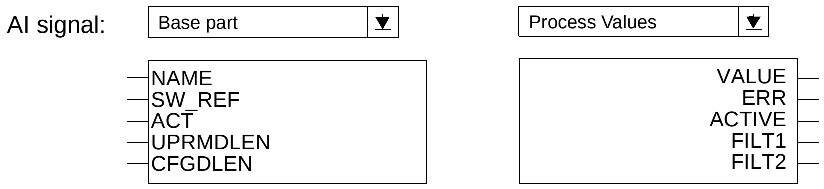
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Analog Input PB_AI830S

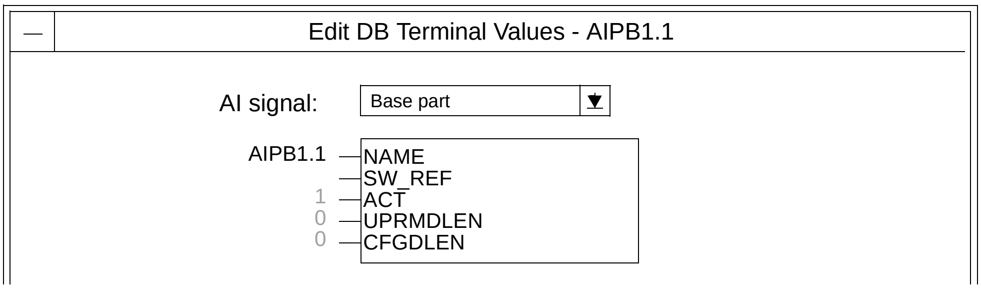
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI830 hardware module.

Overview



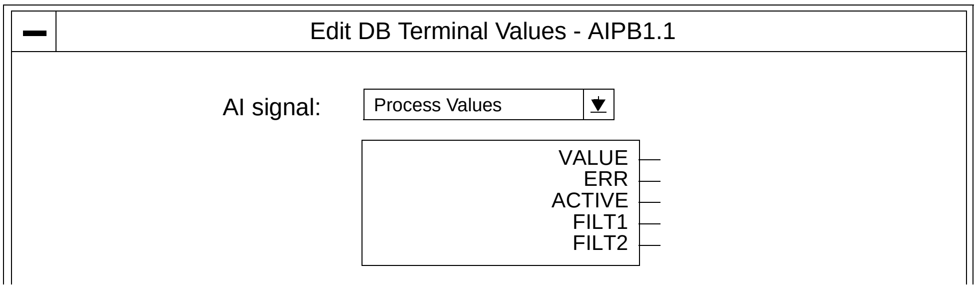
Base part



Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AIPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reasons only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–

Process Values


Edit DB Terminal Values - AIPB1.1

AI signal: Process Values

Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
VALUE	system	–	I(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–
FILT1	system	–	B(r/w)	**FILT**er time channel **1**st digit.	See Table 40 and Table 41.
FILT2	system	–	B(r/w)	**FILT**er time channel **2**nd digit.	

Table 40. Parameter Definition for PB_AI830S

Configuration Parameter	**Values**	**Location**	**Associated to**
Filter time channel	0 = filter off 1 = 1 s 2 = 5 s 3 = 15 s	FILT1, 1st bit FILT2, 2nd bit	Channel

Table 41 includes the possible settings for FILT1 and FILT2.

.

Table 41. Filter Time Settings for PB_AI830S

FILT1	FILT2	Filter Time Channel
0	0	filter off
1	0	1 s
0	1	5 s
1	1	15 s

TC module PB_AI835

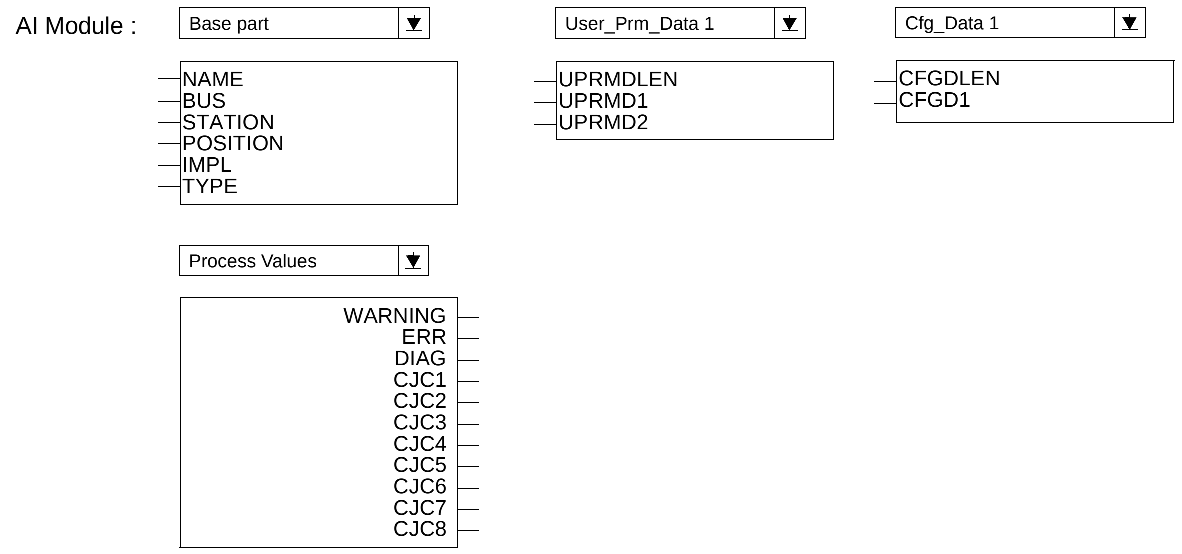
Summary

The TC module data base element specifies an Analog Input TC hardware module of type AI835 contained in an PROFIBUS station. The data base element is superior to the signal elements associated to the TC input channels in the module and contains diagnostic information of the I/O module.

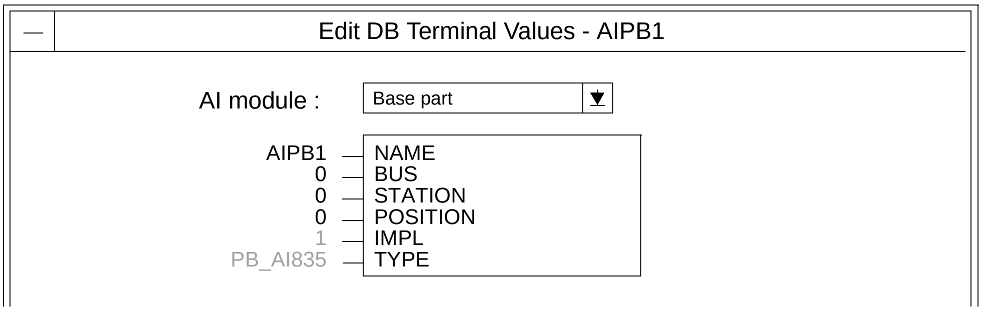
The Engineering Station will create:

- 1 data base element of type TC module
- 8 (PB_AI835S) data base elements of type TC Input.

Overview



Base part



Edit DB Terminal Values - AIPB1

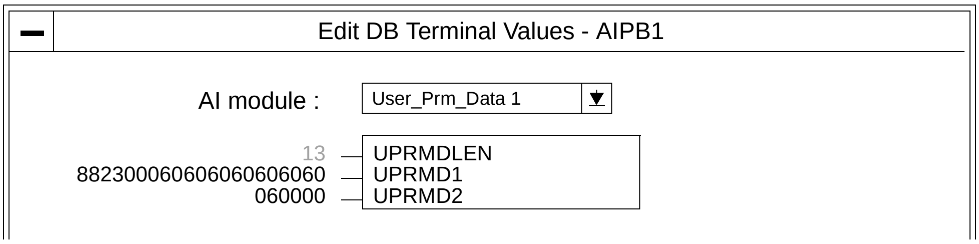
AI module : Base part

AIPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_AI835 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AI835	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values - AIPB1

AI module : User_Prm_Data 1

13 — UPRMDLEN
8823000606060606060606060 — UPRMD1
060000 — UPRMD2

Terminal Description, User_Prm_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
UPRMDLEN	predef	13	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, **1**st 10 bytes.	Hexadecimal number. See Table 42 and Table 43.
UPRMD2	user	060000	–	**U**ser **P**a**R**a**M**eter **D**ata, 13th bytes.	

(1) 8823000606060606060606060

Table 42. Parameter Definition for PB_AI835

Configuration Parameter	**Values**	**Location**	**Associated to**
Fix junction temperature	-40...100 °C or -40...212 °F	Byte 12 and 13, range H'0000 to H'FF14.	Module
Grid frequency, A/D converter integration time	0 = 50 Hz 1 = 60 Hz	Byte 4, bit 6 Byte 4 only	Module
Thermocouple type per channel	0 = 44 to 1820 °C, type B 1 = 111 to 3308 °F, type B 2 = 0 to 2300 °C, type C 3 = 32 to 4172 °F type C 4 = -270 to 1000 °C type E 5 = -454 to 1832 °F type E 6 = -210 to 1200 °C type J 7 = -346 to 2192 °F type J 8 = -270 to 1372 °C type K 9 = -454 to 2501 °F type K 10 = -270 to 1300 °C type N 11 = -454 to 2372 °F type N 12 = -50 to 1768 °C type R 13 = -58 to 3214 °F type R 14 = -50 to 1768 °C type S 15 = -58 to 3214 °F type S 16 = -270 to 400 °C type T 17 = -454 to 752 °F type T 18 = -40 to 100 °C 19 = -40 to 212 °F 20 = -30 to 75 mV (linear)	Byte 4, bit 0 to 4 Byte 5, bit 0 to 4 … Byte 11, bit 0 to 4	Channel 1 Channel 2 … Channel 8

Table 43 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked bold.

Table 43. User Parameter Definition for PB_AI835, Description of Bytes

Byte Number	UPRMD	Thermocouple Type	Grid Frequency	Associated to
1–3	882300	–	–	Module
4	00	44 to 1820 °C, type B	50 Hz	Module, channel 1
	01	111 to 3308 °F, type B	50 Hz	
	02	0 to 2300 °C, type C	50 Hz	
	03	32 to 4172 °F, type C	50 Hz	
	04	-270 to 1000 °C, type E	50 Hz	
	05	-454 to 1832 °F, type E	50 Hz	
	06	**-210 to 1200 °C, type J**	**50 Hz**	
	07	-346 to 2192 °F, type J	50 Hz	
	08	-270 to 1372 °C, type K	50 Hz	
	09	-454 to 2501 °F, type K	50 Hz	
	0A	-270 to 1300 °C, type N	50 Hz	
	0B	-454 to 2372 °F, type N	50 Hz	
	0C	-50 to 1768 °C, type R	50 Hz	
	0D	-58 to 3214 °F, type R	50 Hz	
	0E	-50 to 1768 °C type S	50 Hz	
	0F	-58 to 3214 °F type S	50 Hz	
	10	-270 to 400 °C type T	50 Hz	
	11	-454 to 752 °F type T	50 Hz	
	12	-40 to 100 °C	50 Hz	
	13	-40 to 212 °F	50 Hz	
	14	-30 to 75 mV (linear)	50 Hz	
	40	44 to 1820 °C, type B	60 Hz	
	41	111 to 3308 °F, type B	60 Hz	
	42	0 to 2300 °C, type C	60 Hz	
	43	32...4172 °F, type C	60 Hz	
	44	-270 to 1000 °C, type E	60 Hz	
	45	-454 to 1832 °F, type E	60 Hz	
	46	-210 to 1200 °C, type J	60 Hz	

Table 43. User Parameter Definition for PB_AI835, Description of Bytes (Continued)

Byte Number	UPRMD	Thermocouple Type	Grid Frequency	Associated to
4 (continued)	47	-346 to 2192 °F, type J	60 Hz	Channel 1 (continued)
	48	-270 to 1372 °C, type K	60 Hz	
	49	-454 to 2501 °F, type K	60 Hz	
	4A	-270 to 1300 °C, type N	60 Hz	
	4B	-454 to 2372 °F, type N	60 Hz	
	4C	-50 to 1768 °C, type R	60 Hz	
	4D	-58 to 3214 °F, type R	60 Hz	
	4E	-50 to 1768 °C, type S	60 Hz	
	4F	-58 to 3214 °F, type S	60 Hz	
	50	-270 to 400 °C, type T	60 Hz	
	51	-454 to 752 °F, type T	60 Hz	
	52	-40 to 100 °C	60 Hz	
	53	-40 to 212 °F	60 Hz	
	54	-30 to 75 mV (linear)	60 Hz	
5	00	44 to 1820 °C, type B	–	Channel 2
	01	111 to 3308 °F, type B	–	
	02	0 to 2300 °C, type C	–	
	03	32 to 4172 °F, type C	–	
	04	-270 to 1000 °C, type E	–	
	05	-454 to 1832 °F, type E	–	
	06	**-210 to 1200 °C, type J**	**–**	
	07	-346 to 2192 °F, type J	–	
	08	-270 to 1372 °C, type K	–	
	09	-454 to 2501 °F, type K	–	
	0A	-270 to 1300 °C, type N	–	
	0B	-454 to 2372 °F, type N	–	
	0C	-50 to 1768 °C, type R	–	
	0D	-58 to 3214 °F, type R	–	
	0E	-50 to 1768 °C, type S	–	
	0F	-58 to 3214 °F, type S	–	

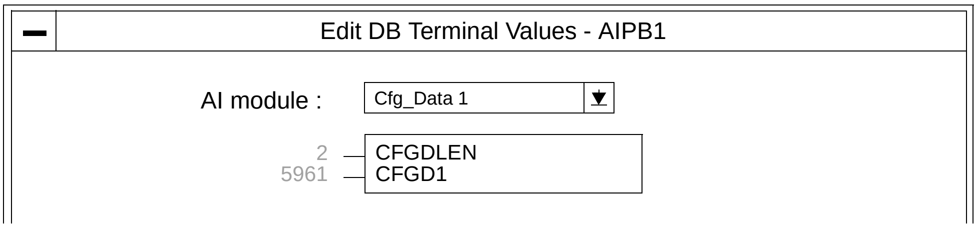
Table 43. User Parameter Definition for PB_AI835, Description of Bytes (Continued)

Byte Number	UPRMD	Thermocouple Type	Grid Frequency	Associated to
5 (continued)	10	-270 to 400 °C, type T	–	Channel 2
	11	-454 to 752 °F, type T	–	
	12	-40 to 100 °C	–	
	13	-40 to 212 °F	–	
	14	-30 to 75 mV (linear)	–	
6	See byte 5			Channel 3
…	…	…	…	…
11	See byte 5			Channel 8
12	H'0000 to H'FF14			Module
13				

NOTE

Do not use other values for UPRMD than stated in Table 43.

Cfg_Data 1



Edit DB Terminal Values - AIPB1

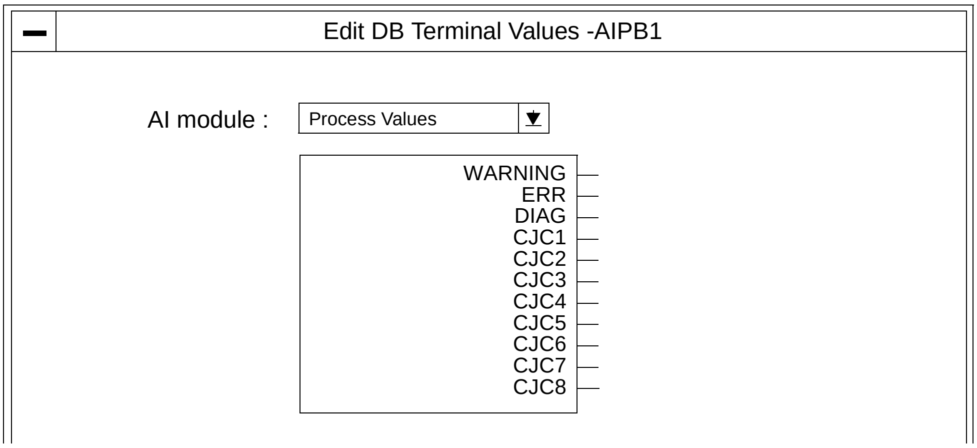
AI module : Cfg_Data 1

2 — CFGDLEN
5961 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CFGDLEN	predef	2	–	**C**on**FiG** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5961	–	**C**on**FiG**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Edit DB Terminal Values -AIPB1

AI module : Process Values

Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction
CJC1…8	system	–	B(r/w)	**C**old **J**unction **T**emperature channel.	See Table 44.

Table 44. Parameter Definition

Configuration Parameter	**Values**	**Location**
Cold junction temperature channel	0 = CJT compensation by means of Pt100 RTD connected to channel 7 1 = fixed CJT compensation by means of the FJT parameter	CJC1, 1th bit for channel 1 CJC2, 2nd bit for channel 2 … CJC8, 8th bit for channel 8

Table 45 includes the possible settings for CJC1 to CJC8.

Table 45. Filter Time Settings for PB_AI835

Settings of Terminal CJC1…CJC8	**Cold junction temperature**
0	CJT compensation by means of Pt100 RTD channel
1	Fixed CJT channel.

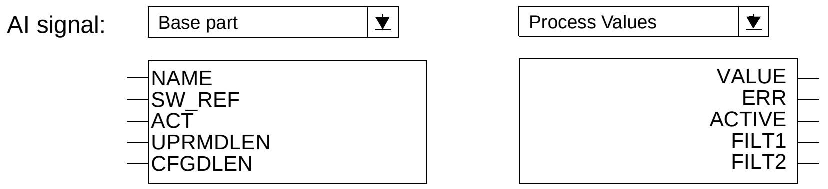
Analog Input

PB_AI835S

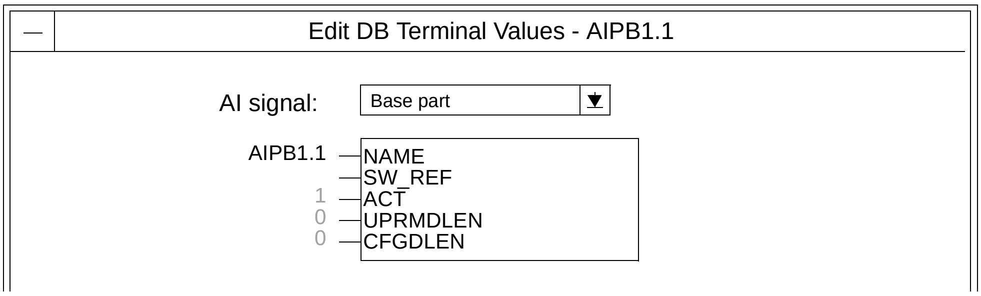
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AI835 hardware module.

Overview



Base part



Edit DB Terminal Values - AIPB1.1

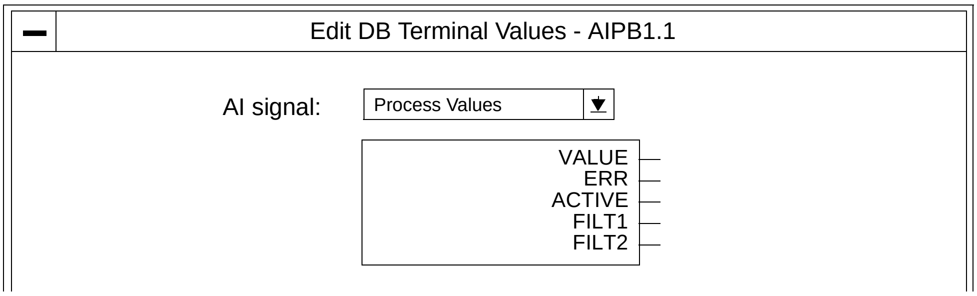
AI signal: Base part

AIPB1.1 NAME
SW_REF
1 ACT
0 UPRMDLEN
0 CFGDLEN

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reasons only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–

Process Values



Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE	system	–	I(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal	–
FILT1	system	–	B(r/w)	**FILT**er time channel **1**st digit	See Table 46 and Table 47.
FILT2	system	–	B(r/w)	**FILT**er time channel **2**nd digit	

Table 46. Parameter Definition for PB_AI835S

Configuration Parameter	Values	Location	Associated to
Filter time channel	0 = filter off 1 = 1 s 2 = 5 s 3 = 15 s	FILT1, 1st bit FILT2, 2nd bit	Channel

Table 47 includes the possible settings for FILT1 and FILT2.

.

Table 47. Filter Time Settings for PB_AI835S

FILT1	**FILT2**	**Filter Time Channel**
0	0	filter off
1	0	1 s
0	1	5 s
1	1	15 s

AO module PB_AO810

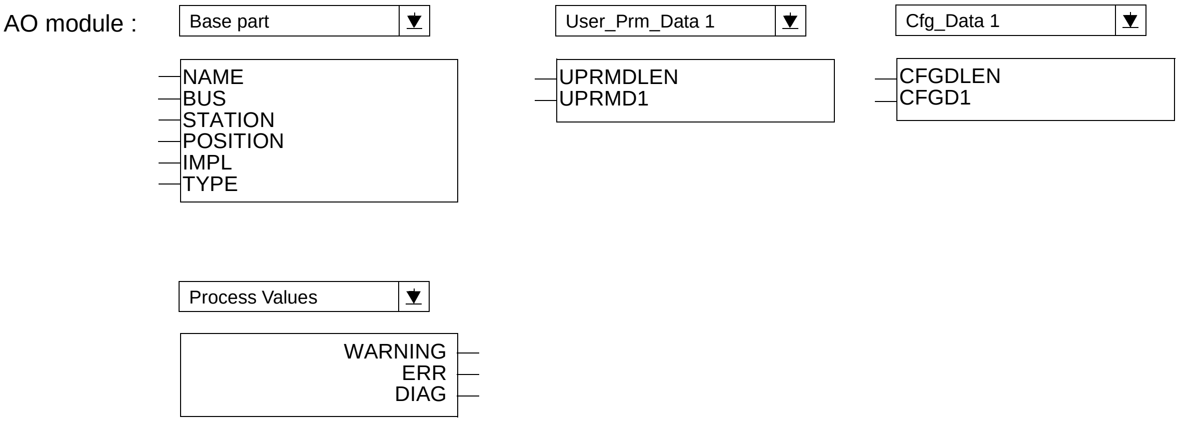
Summary

The AO module data base element specifies an Analog Output hardware module of type AO810 contained in an PROFIBUS station. The data base element is superior to the signal elements associated to the analog output channels in the module and contains diagnostic information of the I/O module.

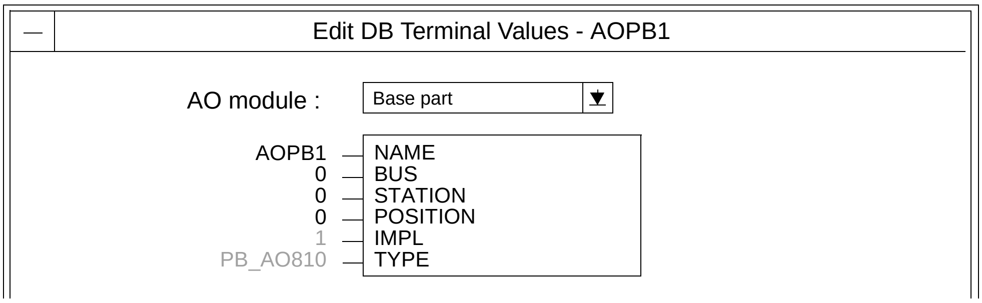
The Engineering Station will create:

- 1 data base element of type AO module
- 8 (PB_AO810) data base elements of type Analog Output.

Overview



Base part



Edit DB Terminal Values - AOPB1

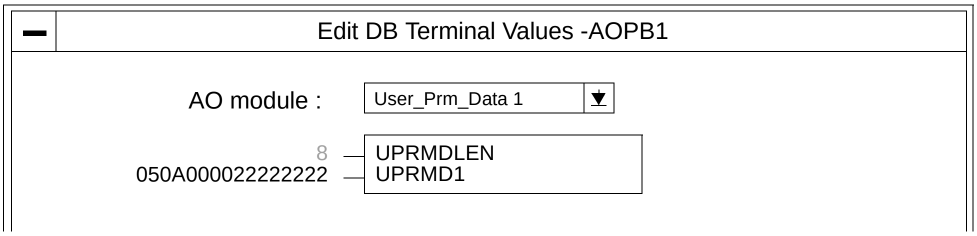
AO module : Base part

AOPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_AO810 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AO810	–	Module **TYPE** designation.	–

User_Prm_Data 1



AO module : User_Prm_Data 1

8 — UPRMDLEN
050A000022222222 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	8	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, **1**st 10 bytes.	Hexadecimal number. See Table 48 and Table 49.

(1) 050A000022222222

Table 48. Parameter Definition for PB_AO810

Configuration Parameter	**Values**	**Location**	**Associated to**
OSP time-out	0 = OSP time-out off 1 = OSP time-out 1024 ms	Byte 4, bit 0	Module
Signal range channel #	0 = 0 to 20 mA 1 = 4 to 20 mA	Byte 5, bit 1 to 3 Byte 5, bit 5 to 7 Byte 6, bit 1 to 3 Byte 6, bit 5 to 7 … Byte 8, bit 5 to 7	Channel 1 Channel 2 Channel 3 Channel 4 … Channel 8
OSP control channel # (output setpoint)	0 = keep current value 1 = set OSP value upon loss of communication	Byte 5, bit 0 Byte 5, bit 4 Byte 6, bit 0 Byte 6, bit 4 … Byte 5, bit 4	Channel 1 Channel 2 Channel 3 Channel 4 … Channel 8

Table 49 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked bold.

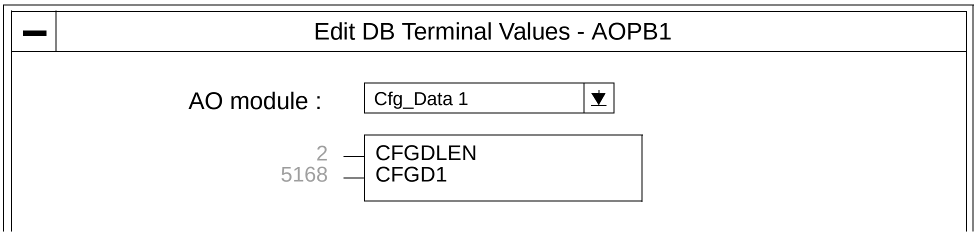
Table 49. User Parameter Definition for PB_AO810, Description of Bytes

Byte Number	**UPRMD**	**OSP Time-out**	**OSP Control Channel**	**Signal Range Channel**	**Associated to**
1–3	050A00	–	–	–	Module
4	**00**	**off**	–	–	Module
	01	1024 ms	–	–	
5 bit 0–3	0	–	Keep current value.	0 to 20 mA	Channel 1
	1	–	Set OSP value upon loss of communication.	0 to 20 mA	Channel 1
	2	–	Keep current value.	4 to 20 mA	Channel 1
	3	–	Set OSP value upon loss of communication	4 to 20 mA	Channel 1
5 bit 4–7	0	–	Keep current value	0 to 20 mA	Channel 2
	1	–	Set OSP value upon loss of communication	0 to 20 mA	Channel 2
	2	–	Keep current value	4 to 20 mA	Channel 2
	3	–	Set OSP value upon loss of communication	4 to 20 mA	Channel 2
6 bit 0–3	See byte 5, bit 0–3				Channel 3
…	…				…
8 bit 4–7	See byte 5, bit 4–7				Channel 8

NOTE

Do not use other values for UPRMD than stated in Table 49.

Cfg_Data 1



Edit DB Terminal Values - AOPB1

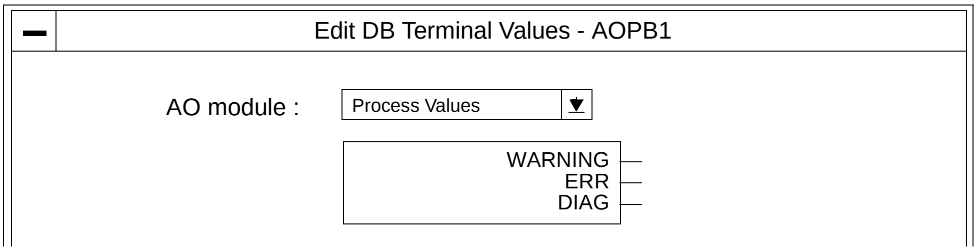
AO module : Cfg_Data 1

2 — CFGDLEN
5168 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5168	–	**C**on**F**i**G**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Terminal Description, Process Values

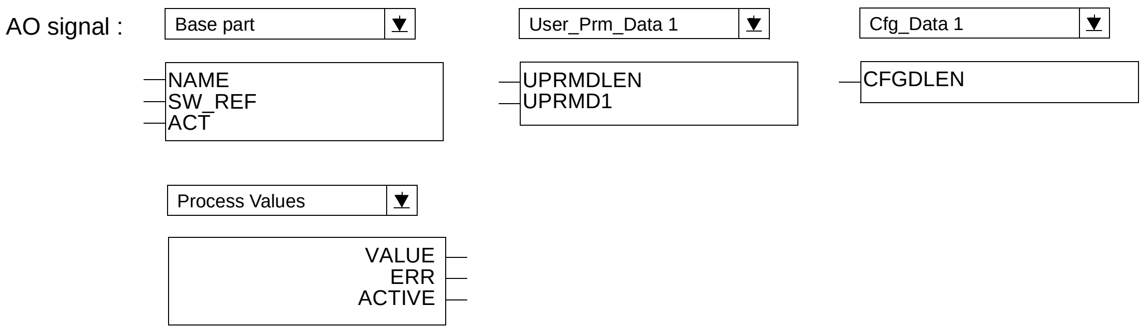
Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Analog Output PB_AO810S

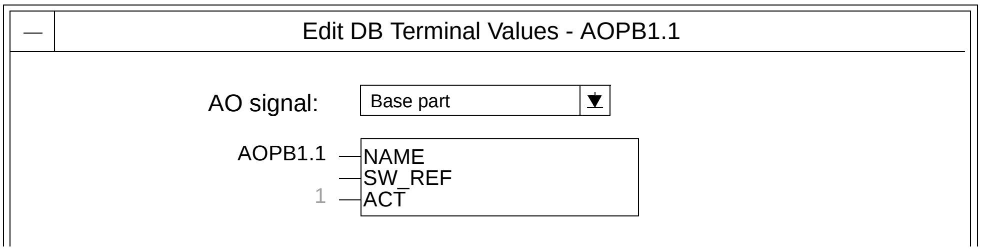
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AO810 hardware module.

Overview



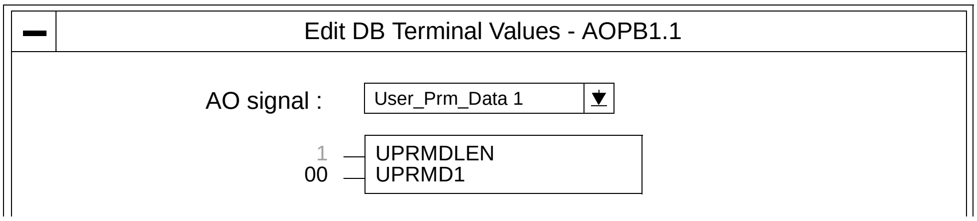
Base part



Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.

User_Prm_Data 1



Edit DB Terminal Values - AOPB1.1

AO signal : User_Prm_Data 1

1 UPRMDLEN
00 UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	1	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	00	–	**U**ser **P**a**R**a**M**eter **D**ata, 1 byte.	Hexadecimal number. See Table 50 and Table 51

Table 50. Parameter Definition for PB_AO810S

Configuration Parameter	Values	Location
OSP value channel	0 to 28480 (0 to 100%) Reduced precision, 8 bits(1)	Byte 1

(1) The most significant 8 bits of the 16-bit integer. 28480=100%=H’6F40 => OPS value channel = 6F.

Table 51 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked bold.

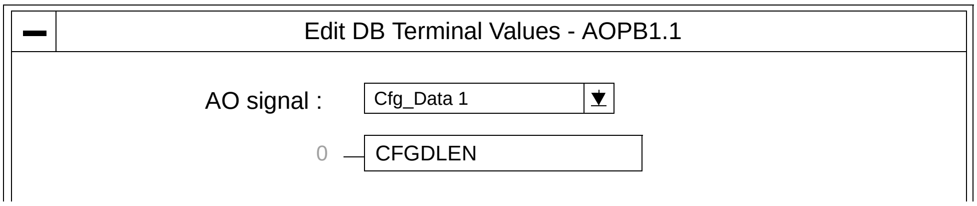
Table 51. User Parameter Definition for PB_AO810S, Description of Bytes

Byte number	UPRMD	OSP value Channel	Associated to
1	**0**	**0%**	Channel
	37	50%	
	6F	100%	

NOTE

Do not use other values for UPRMD than stated in Table 51.

Cfg_Data 1

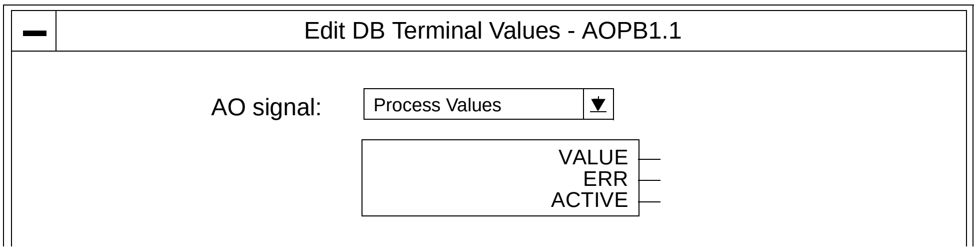


AO signal : Cfg_Data 1

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values



AO signal: Process Values

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–

AO module PB_AO820

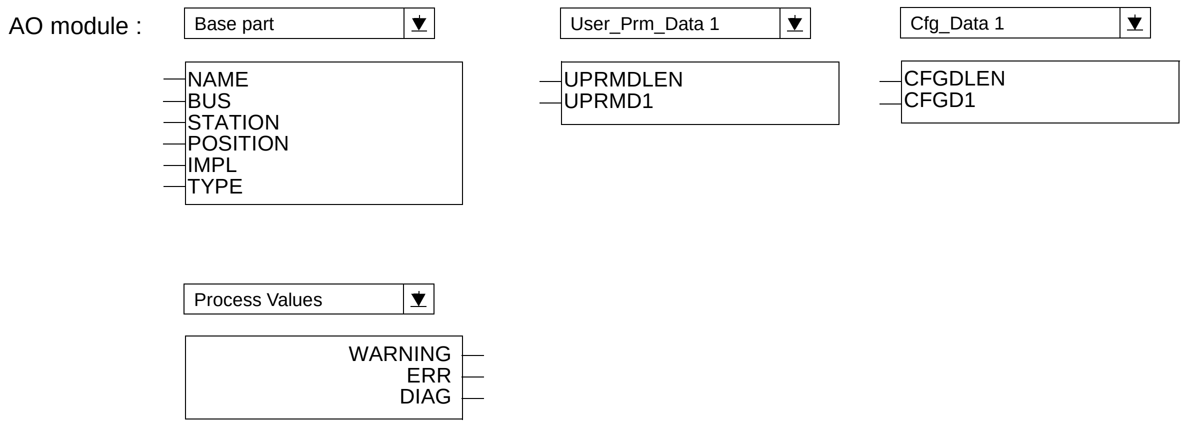
Summary

The AO module data base element specifies an Analog Output hardware module of type AO820 contained in an PROFIBUS station. The data base element is superior to the signal elements associated to the analog output channels in the module and contains diagnostic information of the I/O module.

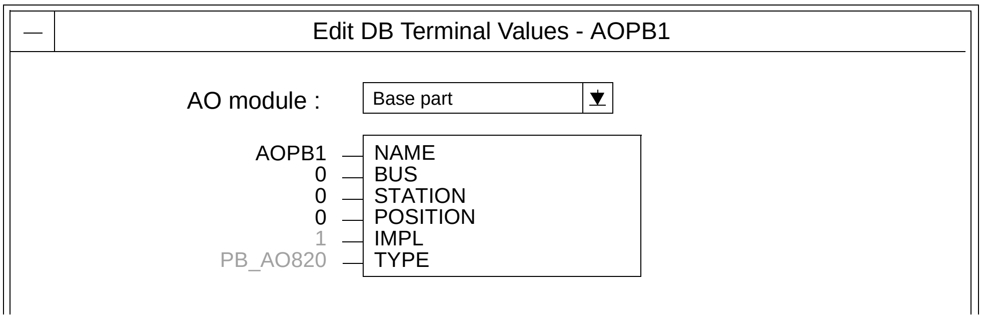
The Engineering Station will create:

- 1 data base element of type AO module
- 4 (PB_AO820) data base elements of type Analog Output.

Overview



Base part

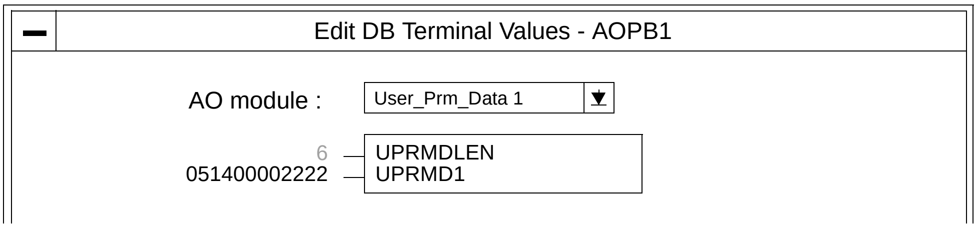


AOPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_AO820 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	AOPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AO820	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values - AOPB1

AO module : User_Prm_Data 1

6 UPRMDLEN
051400002222 UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
UPRMDLEN	predef	6	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	051400002222	–	**U**ser **P**a**R**a**M**eter **D**ata, 6 bytes.	Hexadecimal number. See Table 52 and Table 53

Table 52. Parameter Definition for PB_AO820

Configuration Parameter	**Values**	**Location**	**Associated to**
OSP control channel # (output setpoint)	0 = keep current value 1 = set OSP value upon loss of communication	Byte 5, bit 0 Byte 5, bit 4 Byte 6, bit 0 Byte 6, bit 4 … Byte 5, bit 4	Channel 1 Channel 2 Channel 3 Channel 4 … Channel 8
OSP time-out	0 = OSP time-out off 1 = OSP time-out 1024 ms	Byte 4, bit 0	module
Signal range channel #	0 = 0 to 20 mA 1 = 4 to 20 mA 2 = 0 to 10 V 3 = 2 to 10 V 4 = -20 to 20 mA 5 = -10 to 10 V	Byte 5, bit 1 to 3 Byte 5, bit 5 to 7 Byte 6, bit 1 to 3 Byte 6, bit 5 to 7 … Byte 8, bit 5 to 7	Channel 1 Channel 2 Channel 3 Channel 4 … Channel 8

Table 52 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked bold.

Table 53. User Parameter Definition for PB_AO820, Description of Bytes

Byte Number	**UPRMD**	**OSP Time-out**	**OSP Control Channel**	**Signal Range Channel**	**Associated to**
1–3	051400	–			Module
4	00	off			Module
	01	1024 ms			
5 bit 0–3	0		Keep current value.	0 to 20 mA	Channel 1
	1		Set OSP value upon loss of communication.	0 to 20 mA	
	2		**Keep current value.**	**4 to 20 mA**	
	3		Set OSP value upon loss of communication.	4 to 20 mA	
	4		Keep current value.	0 to 10 V	
	5		Set OSP value upon loss of communication.	0 to 10 V	
	6		Keep current value.	2 to 10 V	
	7		Set OSP value upon loss of communication.	2 to 10 V	
	8		Keep current value.	-20 to 20 mA	
	9		Set OSP value upon loss of communication.	-20 to 20 mA	
	A		Keep current value.	-10 to 10 V	
	B		Set OSP value upon loss of communication.	-10 to 10 V	
5 bit 4–7	0		Keep current value.	0 to 20 mA	Channel 2
	1		Set OSP value upon loss of communication.	0 to 20 mA	
	2		**Keep current value.**	**4 to 20 mA**	
	3		Set OSP value upon loss of communication.	4 to 20 mA	
	4		Keep current value.	0 to 10 V	
	5		Set OSP value upon loss of communication.	0 to 10 V	
	6		Keep current value.	2 to 10 V	
	7		Set OSP value upon loss of communication.	2 to 10 V	

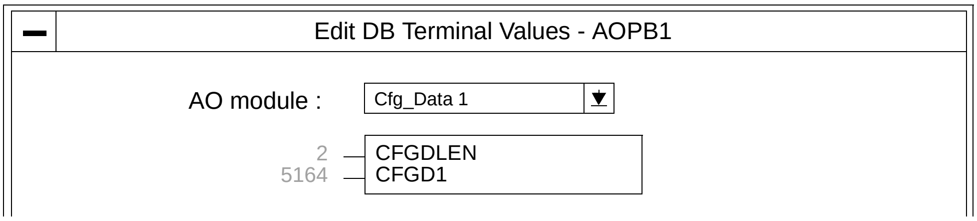
Table 53. User Parameter Definition for PB_AO820, Description of Bytes (Continued)

Byte Number	**UPRMD**	**OSP Time-out**	**OSP Control Channel**	**Signal Range Channel**	**Associated to**
5 bit 4–7 (continued)	8		Keep current value.	-20 to 20 mA	Channel 2 (continued)
	9		Set OSP value upon loss of communication.	-20 to 20 mA	
	A		Keep current value.	-10 to 10 V	
	B		Set OSP value upon loss of communication.	-10 to 10 V	
6 bit 0–3	See byte 5, bit 0–3				Channel 3
6 bit 4–7	See byte 5, bit 4–7				Channel 4

NOTE

Do not use other values for UPRMD than stated in Table 53.

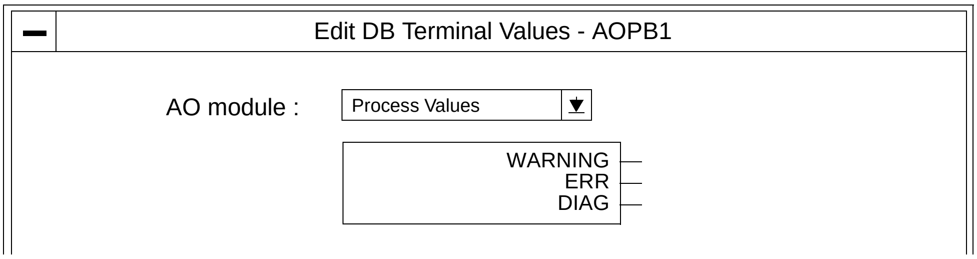
Cfg_Data 1



Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5164	–	**C**on**Fi**G**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Terminal Description, Process Values

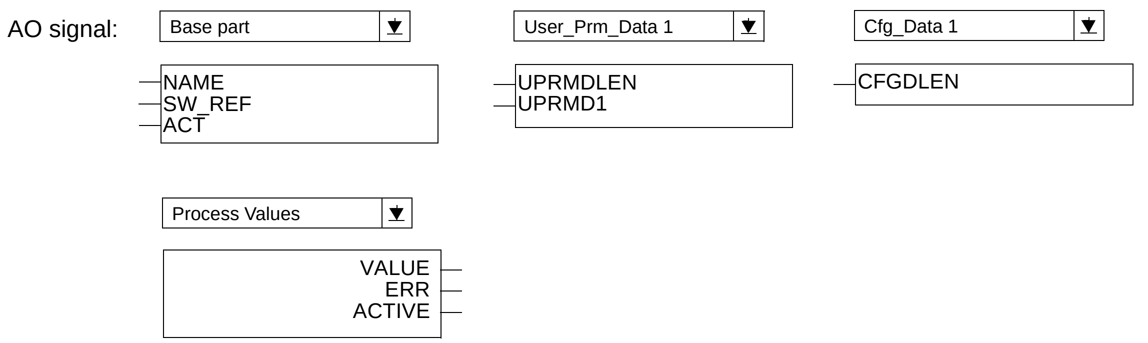
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Analog Output PB_AO820S

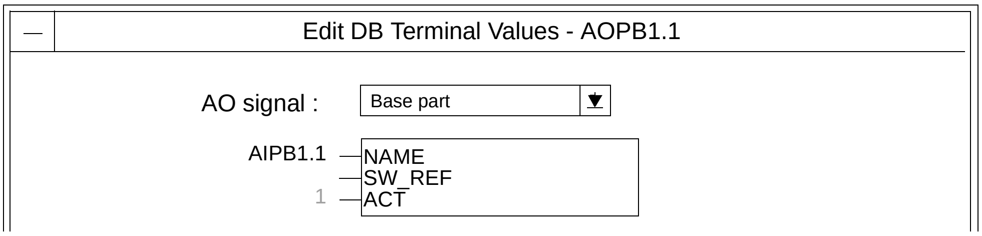
Summary

The data base element Analog Input is subordinate to the AI module data base element specifying an AO820 hardware module.

Overview



Base part



Edit DB Terminal Values - AOPB1.1

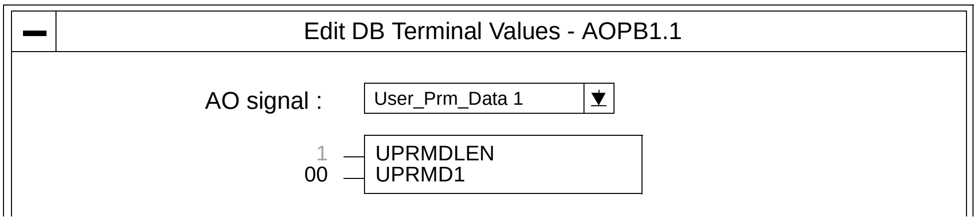
AO signal : Base part

AIPB1.1 NAME
SW_REF
1 ACT

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.

User_Prm_Data 1



Edit DB Terminal Values - AOPB1.1

AO signal : User_Prm_Data 1

1 — UPRMDLEN
00 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	1	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	00	–	**U**ser **P**a**R**a**M**eter **D**ata, 1 byte.	Hexadecimal number. See Table 54 and Table 55

Table 54. Parameter Definition for PB_AO820S

Configuration Parameter	Values	Location
OSP value channel	0 to 28480 (0 to 100%) or -28480 to 28480 (0 to 100%) dependent on signal range channel Reduced precision, 8 bits(1)	Byte 1

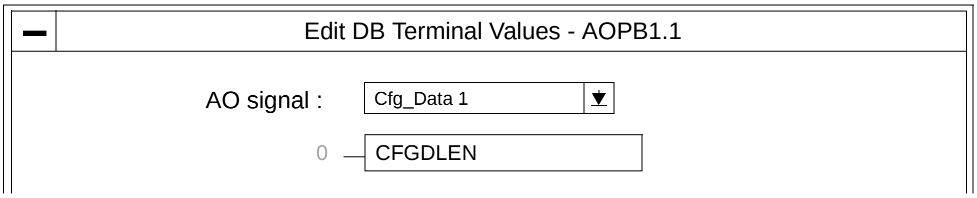
(1) The most significant 8 bits of the 16-bit integer.
-28480=-100%=H’90C0 => OPS value channel =90.
28480=100%=H’6F40 => OPS value channel = 6F.

Table 55 includes the hexadecimal values for configuration parameters which can be entered for each channel. Other values can be calculated using Table 1.

Table 55. User Parameter Definition for PB_AO820S, Description of Bytes

Byte number	UPRMD	OSP value Channel	Associated to
1	90	-100%	Channel
	C8	-50%	
	0	**0%**	
	37	50%	
	6F	100%	

Cfg_Data 1



Edit DB Terminal Values - AOPB1.1

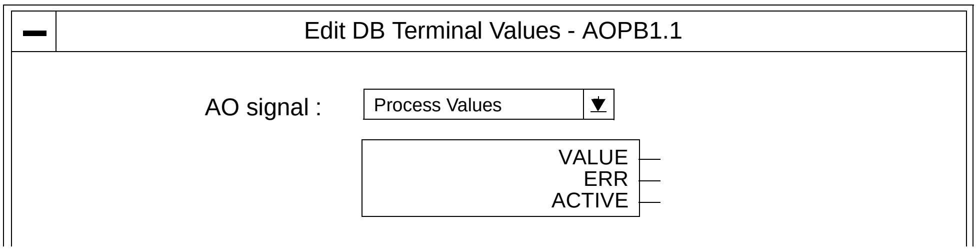
AO signal : Cfg_Data 1

0 — CFGDLEN

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values



Edit DB Terminal Values - AOPB1.1

AO signal : Process Values

VALUE —
ERR —
ACTIVE —

Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE	system	–	I(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–

DI module PB_DI81x

Summary

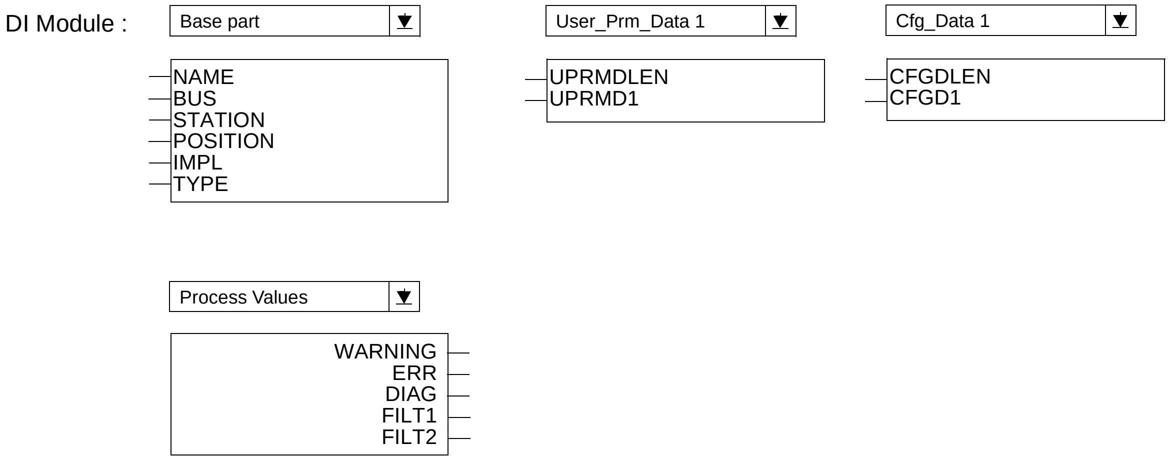
The DI module data base element specifies a Digital Input hardware module inserted in an PROFIBUS I/O station. The data base element is superior to the signal elements associated to the digital input channels in the module. The following Digital Input modules are supported:

- PB_DI810: 2 × 8 channels with 24 V DC. Rated isolation voltage 50 V.
- PB_DI811: 2 × 8 channels with 48 V DC. Rated isolation voltage 50 V.
- PB_DI814: 1 × 16 channels with 24 V DC. Current source. Rated isolation voltage 50 V.

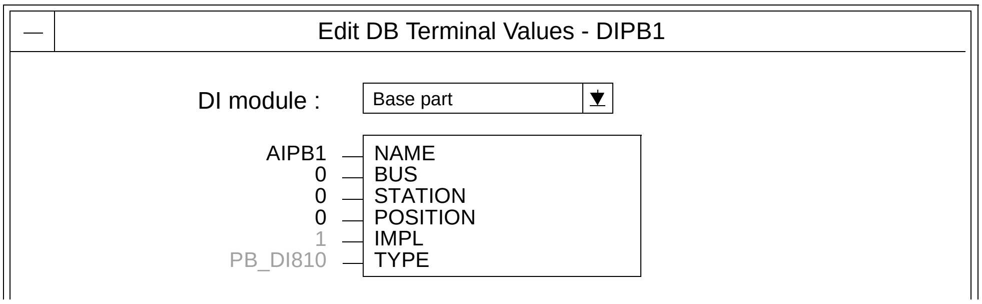
The Engineering Station will create:

- 1 data base element of type DI module
- 16 (PB_DI81x) data base elements of type Digital Input.

Overview



Base part



Edit DB Terminal Values - DIPB1

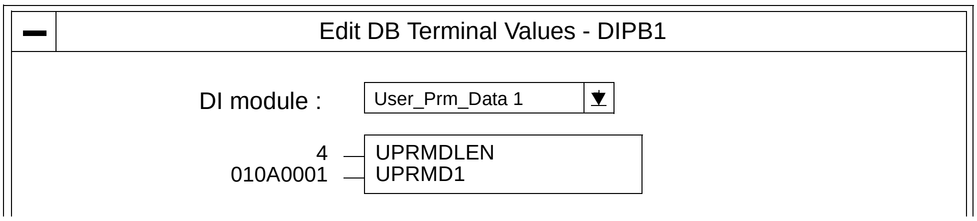
DI module : Base part

AIPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_DI810 — TYPE

Terminal Description, Base Part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	AIPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AI810/ PB_AI811/ PB_AI814	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values - DIPB1

DI module : User_Prm_Data 1

4 — UPRMDLEN
010A0001 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
UPRMDLEN	predef	4	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–

Terminal Description, User_Prm_Data 1 (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMD1	user	PB_DI810: 010A0001 PB_DI811: 010B0001 PB_DI814: 010E0001	–	**U**ser **P**a**R**a**M**eter **D**ata, 4 bytes.	Hexadecimal number, see Table 57. For parameter definitions see Table 56.

Table 56. Parameter Definitions

Configuration Parameter	Values	Location	Associated to
Sensor power supervision	0 = power supervision off **1 = power supervision on**	Byte 4, bit 0	Module

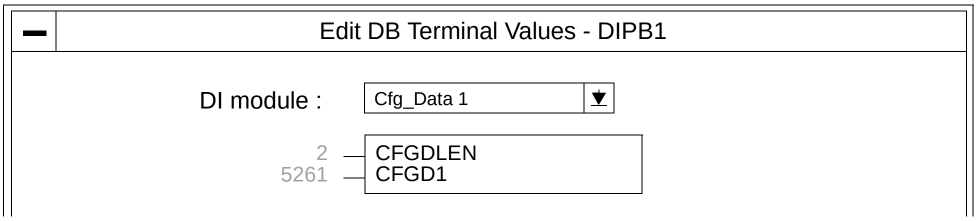
Table 57. User Parameter Definition for PB_DI81x, Description of Bytes

Byte number	UPRMD	Sensor power supervision	Associated to
1–3	PB_DI810: 010A0001 PB_DI811: 010B0001 PB_DI814: 010E0001	–	Module
4	00	Off	Module
	01	**On**	

NOTE

Do not use other values for UPRMD than stated in Table 57

Cfg_Data 1



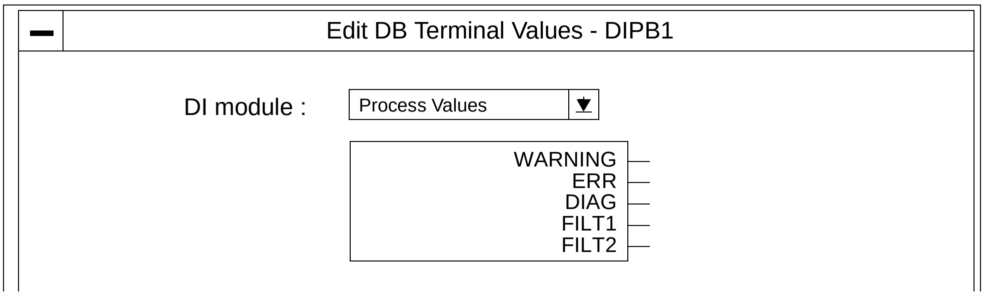
DI module : Cfg_Data 1

2 — CFGDLEN
5261 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5261	–	**C**on**FiG**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction
FILT1	system	–	B(r/w)	**FILT**er time channel **1**st digit.	See Table 58 and Table 59
FILT2	system	–	B(r/w)	**FILT**er time channel **2**nd digit.	

Table 58. Parameter Definition for PB_DI81x

Configuration Parameter	**Values**	**Location**	**Associated to**
Filter time	0 = 2 ms 1 = 4 ms 2 = 8 ms 3 = 16 ms	FILT1, 1st bit FILT2, 2nd bit	Module

Table 37 includes the possible settings for FILT1 and FILT2.

Table 59. Filter Time Settings for PB_DI81x

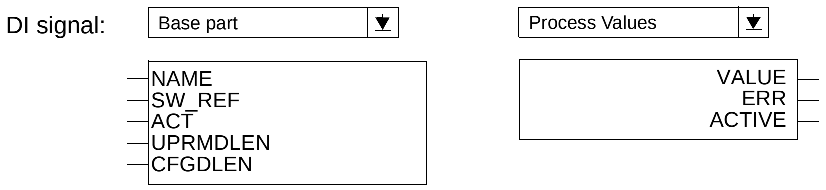
FILT1	**FILT2**	**Filter Time**
0	0	2 ms
1	0	4 ms
0	1	8 ms
1	1	16 ms

Digital Input **PB_DI81xS**

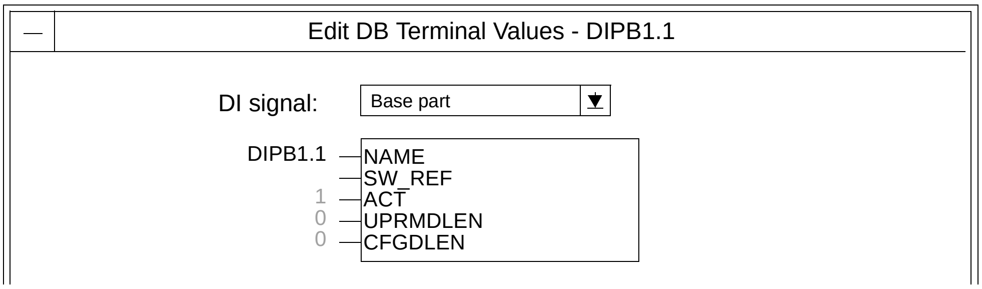
Summary

The data base element Digital Input is subordinate to the DI module data base element specifying an DI810, DI811 or DI814 hardware module.

Overview



Base part

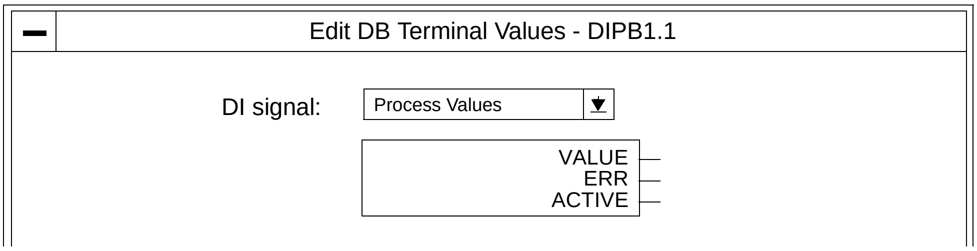


DIPB1.1 NAME
SW_REF
1 ACT
0 UPRMDLEN
0 CFGDLEN

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	DIPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values



Edit DB Terminal Values - DIPB1.1

DI signal: Process Values

Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–

DI module **PB_DI82x**

Summary

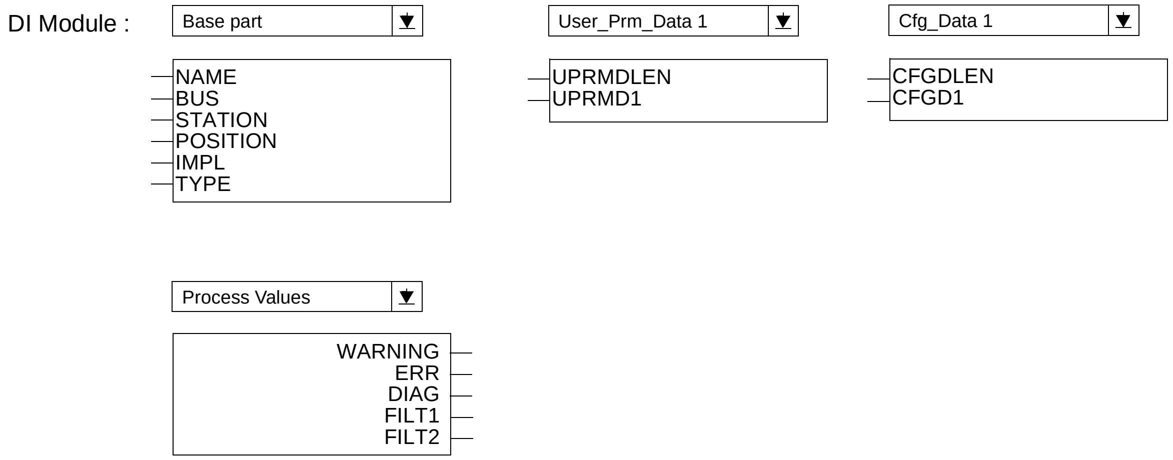
The DI module data base element specifies a Digital Input hardware module inserted in an PROFIBUS I/O station. The data base element is superior to the signal elements associated to the digital input channels in the module. The following Digital Input modules are supported:

- DI820: 1 × 8 channels with 120 V AC. Individual isolation. Rated isolation voltage 250 V.
- DI821: 1 × 8 channels with 230 V AC. Individual isolation. Rated isolation voltage 500 V.

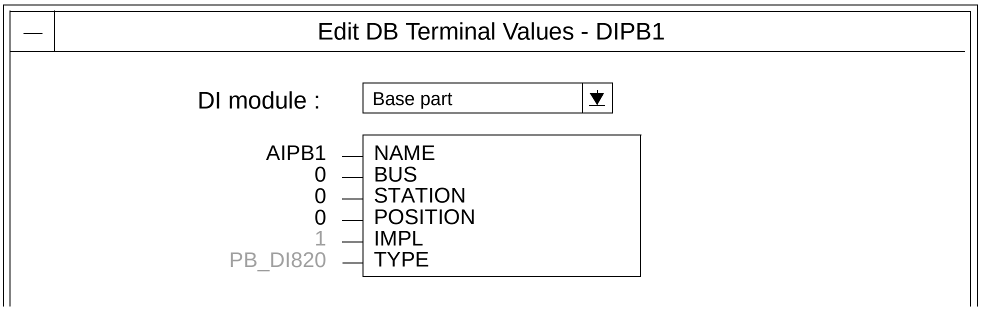
The Engineering Station will create:

- 1 data base element of type DI module
- 16 (PB_DI82x) data base elements of type Digital Input.

Overview



Base part

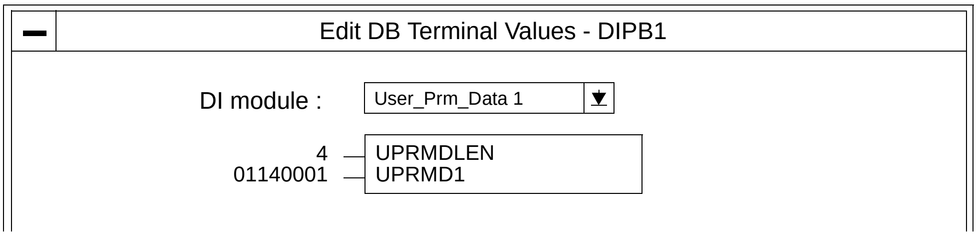


AIPB1 NAME
0 BUS
0 STATION
0 POSITION
1 IMPL
PB_DI820 TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_AI820/ PB_AI821/	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values - DIPB1

DI module : User_Prm_Data 1

4 — UPRMDLEN
01140001 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	4	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, 4 bytes.	Hexadecimal number, see Table 60. For parameter definitions see Table 61.

(1) PB_DI820: 01140001, PB_DI821: 01150001

Table 60. Parameter Definition for PB_DI82x

Configuration Parameter	Values	Location	Associated to
Sensor power supervision	0 = power supervision off **1 = power supervision on**	Byte 4, bit 0	Module

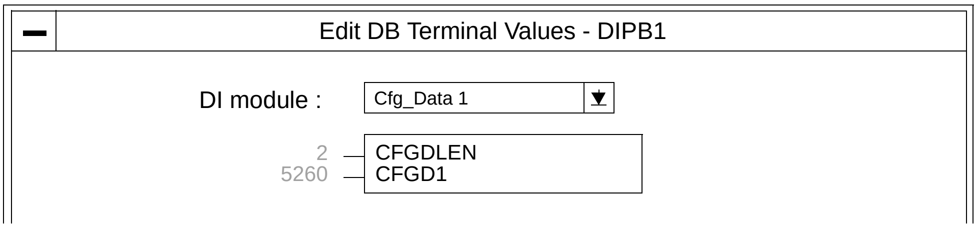
Table 61. User Parameter Definition, Description of Bytes

Byte number	**UPRMD**	**Sensor power supervision**	**Associated to**
1–3	PB_DI820: 01140001 PB_DI821: 01150001	–	Module
4	00	Off	Module
	01	**On**	

NOTE

Do not use other values for UPRMD than stated in Table 66

Cfg_Data 1



Edit DB Terminal Values - DIPB1

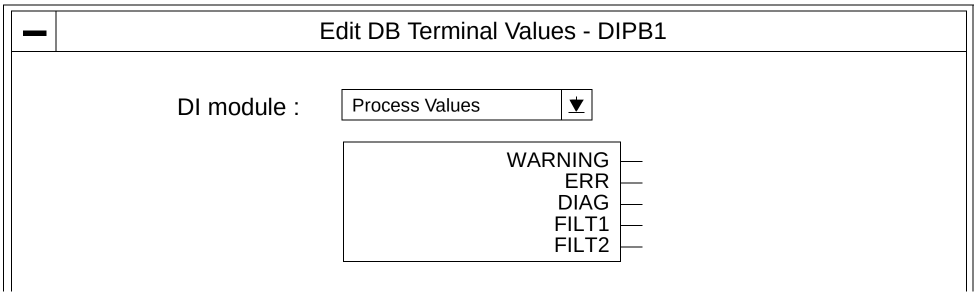
DI module : Cfg_Data 1

2 — CFGDLEN
5260 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5260	–	**C**on**F**i**G**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Edit DB Terminal Values - DIPB1

DI module : Process Values

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction
FILT1	system	–	B(r)	**FILT**er time channel **1**st digit.	See Table 62. For parameter definitions see Table 63.
FILT2	system	–	B(r)	**FILT**er time channel **2**nd digit.	

Table 62. Parameter Definition for PB_DI82x

Configuration Parameter	Values	Location	Associated to
Filter time	0 = 2 ms 1 = 4 ms 2 = 8 ms 3 = 16 ms	FILT1, 1st bit FILT2, 2nd bit	Module

Table 63 includes the possible settings for FILT1 and FILT2.

.

Table 63. Filter Time Settings for PB_DI82x

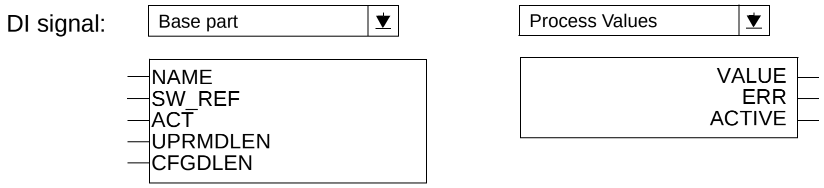
FILT1	**FILT2**	**Filter Time**
0	0	2 ms
1	0	4 ms
0	1	8 ms
1	1	16 ms

Digital Input PB_DI82xS

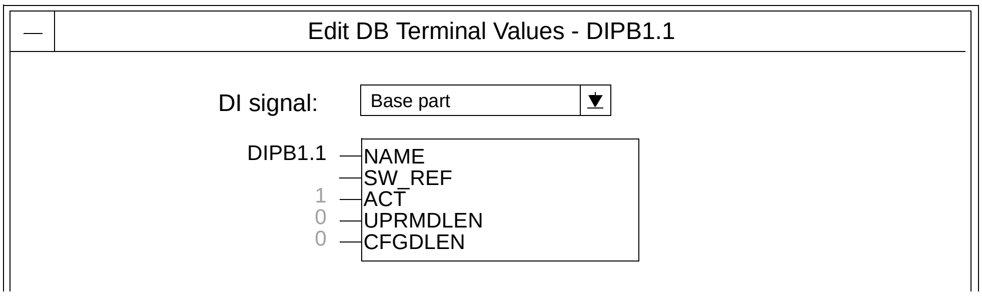
Summary

The data base element Digital Input is subordinate to the DI module data base element specifying an DI820 or DI821 hardware module.

Overview



Base part

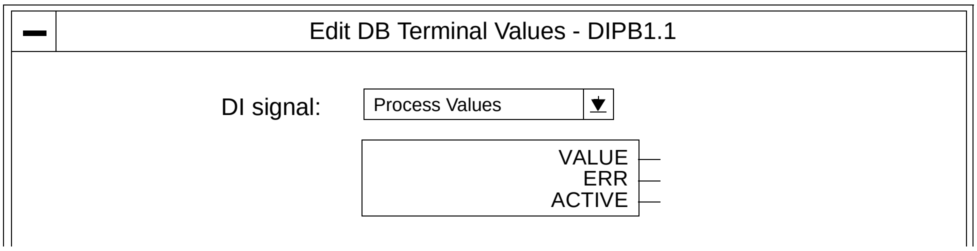


DIPB1.1 NAME
SW_REF
1 ACT
0 UPRMDLEN
0 CFGDLEN

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DIPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values



Edit DB Terminal Values - DIPB1.1

DI signal: Process Values

Terminal Description, Process Values

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–

DO module PB_DO81x

Summary

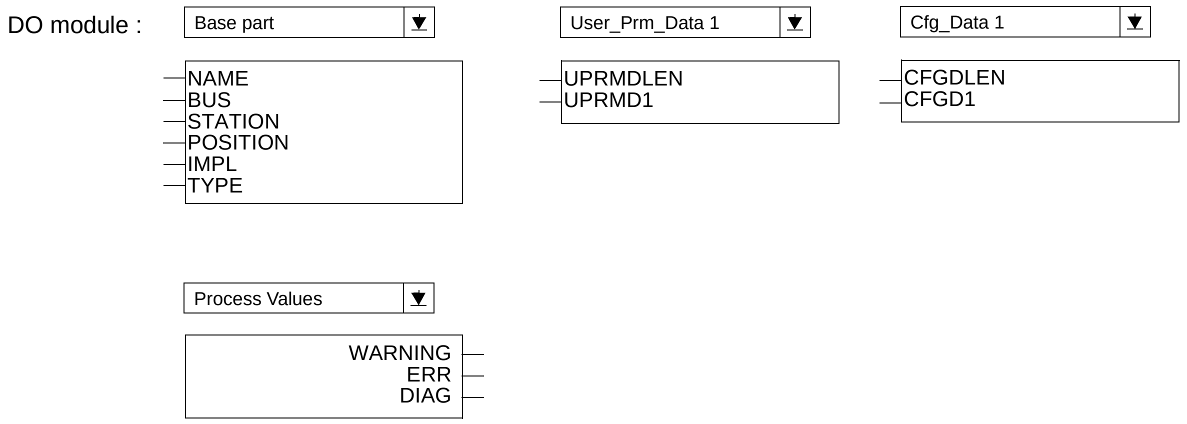
The DO module data base element specifies an Digital Output hardware module inserted in an PROFIBUS I/O station. The data base element is superior to the signal elements associated to the digital output channels in the module. The following modules are supported:

- PB_DO810: 2 × 8 channels with 24 V DC, 0.5 A short circuit proof. Rated isolation voltage 50 V.
- PB_DO814: 2 × 8 channels with 24 V DC, 0.5 A short circuit proof. Current sink.

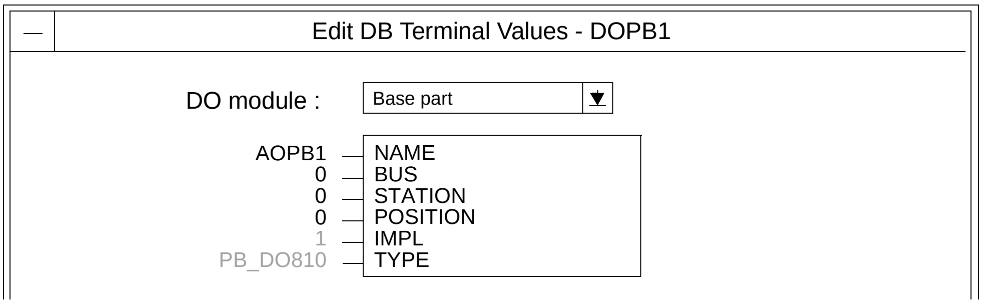
By means of the call name an Engineering Station will create:

- 1 data base element of type DO module
- 16 (PB_DO810, PB_DO814) data base elements of type Digital Output.

Overview



Base part

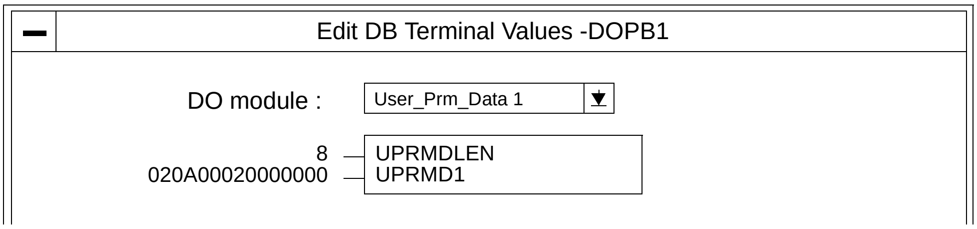


AOPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_DO810 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals in Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_DO810/ PB_DO814	–	Module **TYPE** designation.	–

User_Prm_Data 1



Edit DB Terminal Values -DOPB1

DO module : User_Prm_Data 1

8 — UPRMDLEN
020A00020000000 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	predef	8	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	(1)	–	**U**ser **P**a**R**a**M**eter **D**ata, 8 bytes.	Hexadecimal number. See Table 65. For parameter definitions see Table 64

(1) PB_DO810: 020A000200000000
PB_DO814: 020E000200000000

Table 64. Parameter Definition for PB_DO81x

Configuration Parameter	**Values**	**Location**	**Associated to**
OSP control channel #	0 = keep current value 1 = set OSP value upon loss of communication	Byte 5, bit 0 Byte 5, bit 1 … Byte 5, bit 7 Byte 6, bit 1 … Byte 6, bit 7	Channel 1 Channel 2 Channel 8 Channel 9 … Channel 16
OSP time-out	0 = OSP time-out off 1 = OSP time-out 256 ms	Byte 4, bit 0	Module
OSP value channel #	0 or 1	Byte 7, bit 0 Byte 7, bit 1 … Byte 7, bit 7 Byte 8, bit 1 … Byte 8, bit 7	Channel 1 Channel 2 … Channel 8 Channel 9 … Channel 16
Sensor power supervision	0 = power supervision off 1 = power supervision on	Byte 4, bit 1	Module

Table 65 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values are marked bold.

Table 65. User Parameter Definition for PB_DO81x, Description of Bytes

Byte Number	UPRMD	OSP Time-out	Sensor Power Supervision	OSP Control Channel	OSP Value Channel	Associated to
1–3	050A00	–	–	–	–	Module
4	00	Off	Off	–	–	Module
	01	256 ms	Off	–	–	–
	02	Off	On	–	–	–
	03	256 ms	On	–	–	–
5 bit 0–3	**0**	–	–	**Channel 1–4:** **Keep current value.**	–	Channel 1–4
	1	–	–	Channel 1: Set OSP value upon loss of communication. Channel 2–4: Keep current value.	–	
	2	–	–	Channel 1, 3–4: Keep current value. Channel 2: Set OSP value upon loss of communication.	–	
	3	–	–	Channel 1–2: Set OSP value upon loss of communication. Channel 3–4: Keep current value.	–	
	4	–	–	Channel 1–2, 4: Keep current value. Channel 3: Set OSP value upon loss of communication.	–	
	5	–	–	Channel 1+3: Set OSP value upon loss of communication. Channel 2+4: Keep current value.	–	
	6	–	–	Channel 1+4: Keep current value. Channel 2+3: Set OSP value upon loss of communication.	–	

Table 65. User Parameter Definition for PB_DO81x, Description of Bytes (Continued)

Byte Number	**UPRMD**	**OSP Time-out**	**Sensor Power Supervision**	**OSP Control Channel**	**OSP Value Channel**	**Associated to**
5 bit 0–3 (continued)	7	–	–	Channel 1–3: Set OSP value upon loss of communication. Channel 4: Keep current value.	–	Channel 1–4 (continued)
	8	–	–	Channel 1–3: Keep current value. Channel 4: Set OSP value upon loss of communication.	–	
	9	–	–	Channel 1+4: Set OSP value upon loss of communication. Channel 2+3: Keep current value.	–	
	A	–	–	Channel 1+3: Keep current value. Channel 2+4: Set OSP value upon loss of communication.	–	
	B	–	–	Channel 1, 2+4: Set OSP value upon loss of communication. Channel 3: Keep current value.	–	
	C	–	–	Channel 1–2: Keep current value. Channel 3–4: Set OSP value upon loss of communication.	–	
	D	–	–	Channel 1, 3+4: Set OSP value upon loss of communication. Channel 2: Keep current value.	–	
	E	–	–	Channel 1: Keep current value. Channel 2–4: Set OSP value upon loss of communication.	–	
	F	–	–	Channel 1–4: Set OSP value upon loss of communication.	–	

Table 65. User Parameter Definition for PB_DO81x, Description of Bytes (Continued)

Byte Number	**UPRMD**	**OSP Time-out**	**Sensor Power Supervision**	**OSP Control Channel**	**OSP Value Channel**	**Associated to**
5 bit 4–7	0	–	–	Channel 5–8: Keep current value.	–	Channel 5–8
	…			…		
	F	–	–	Channel 5–8: Set OSP value upon loss of communication.	–	
6 bit 0–3	See byte 5, bit 0–3					Channel 9–12
6 bit 4–7	See byte 5, bit 4–7					Channel 13–16
7 bit 0–3	0				Channel 1–4: 0	Channel 1–4
	1				Channel 1: 1 Channel 2–4: 0	
	2				Channel 1, 3–4: 0 Channel 2: 10	
	3				Channel 1–2: 1 Channel 3–4: 0	
	4				Channel 1–2, 4: 0 Channel 3: 1	
	5				Channel 1+3: 1 Channel 2+4: 0	
	6				Channel 1+4: 0 Channel 2–3: 1	
	7				Channel 1–3: 1 Channel 4: 0	
	8				Channel 1–3: 0 Channel 4: 1	
	9				Channel 1+4: 1 Channel 2–3: 0	
	A				Channel 1+3: 0 Channel 2+4: 1	
	B				Channel 1, 2+4: 1 Channel 3: 0	
	C				Channel 1–2: 0 Channel 3–4: 1	
	D				Channel 1, 3–4: 1 Channel 2: 0	

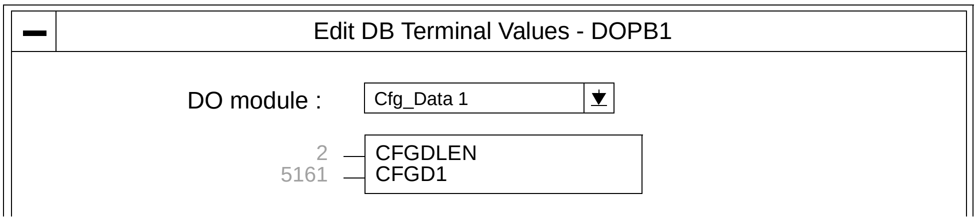
Table 65. User Parameter Definition for PB_DO81x, Description of Bytes (Continued)

Byte Number	UPRMD	OSP Time-out	Sensor Power Supervision	OSP Control Channel	OSP Value Channel	Associated to
7 bit 0–3 (continued)	E				Channel 1: 0 Channel 2–4: 1	Channel 1–4 (continued)
	F				Channel 1–4: 1	
7 bit 4–7	0			Channel 5–8: Keep current value.		Channel 5–8
	…			…		
	F			Channel 5–8: Set OSP value upon loss of communication.		
8 bit 0–3	See byte 7, bit 0–3					Channel 9–12
8 bit 4–7	See byte 7, bit 4–7					Channel 13–16

NOTE

Do not use other values for UPRMD than stated in Table 65.

Cfg_Data 1



Edit DB Terminal Values - DOPB1

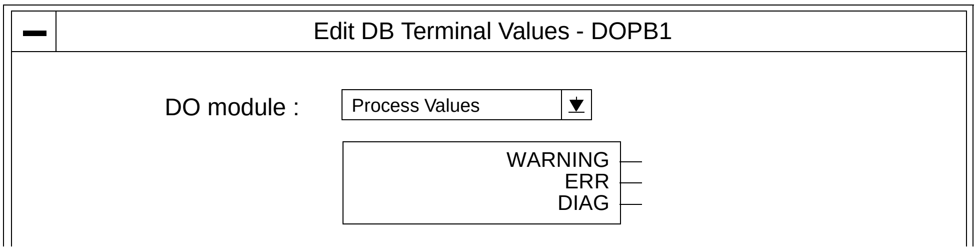
DO module : Cfg_Data 1

2 — CFGDLEN
5161 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5161	–	**C**on**F**i**G**uration **D**ata, 2bytes.Predefined value for every module.	–

Process Values



Edit DB Terminal Values - DOPB1

DO module : Process Values

Terminal Description, Process Values

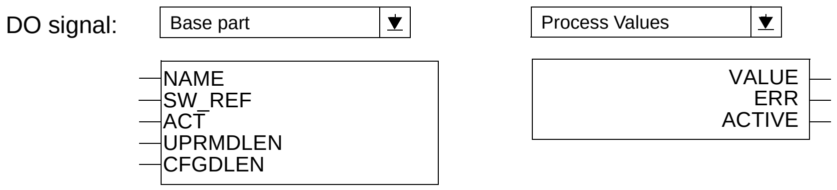
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Digital Output PB_DO81xS

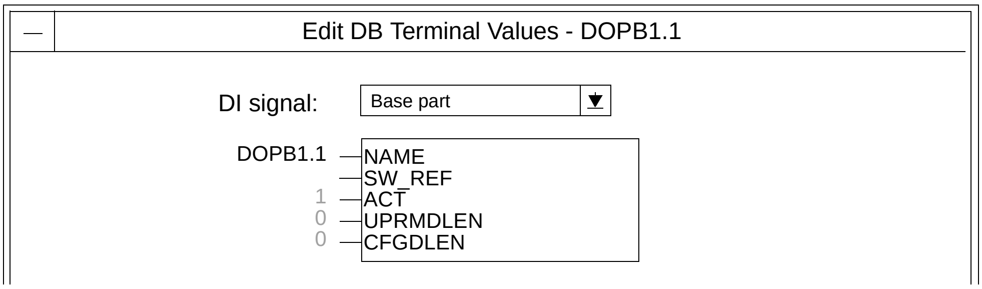
Summary

The data base element Digital Input is subordinate to the AI module data base element specifying an DO810 or DO814 hardware module.

Overview



Base part


Edit DB Terminal Values - DOPB1.1

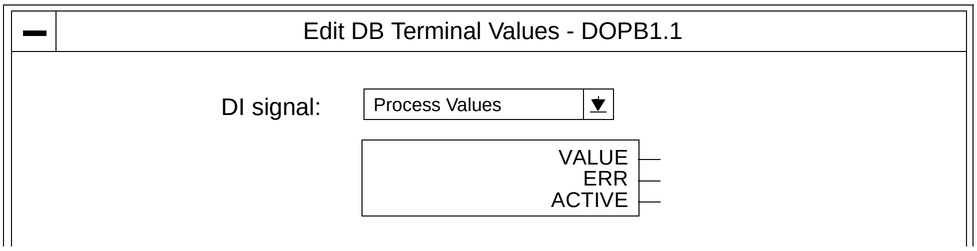
DI signal: Base part

DOPB1.1 — NAME
— SW_REF
1 — ACT
0 — UPRMDLEN
0 — CFGDLEN

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values


Edit DB Terminal Values - DOPB1.1

DI signal: Process Values

Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal	–

DO module PB_DO820

Summary

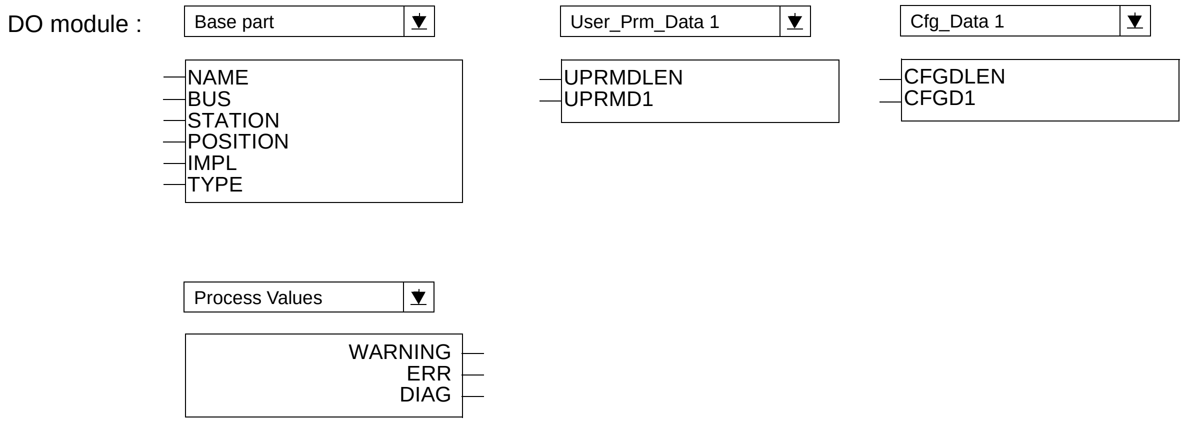
The DO module data base element specifies an Digital Output hardware module inserted in an PROFIBUS I/O station. The data base element is superior to the signal elements associated to the digital output channels in the module. The following modules are supported:

- PB_DO820: 1 × 8 channel relay output, 24–230 V AC, 3 A. Rated isolation voltage 250 V.

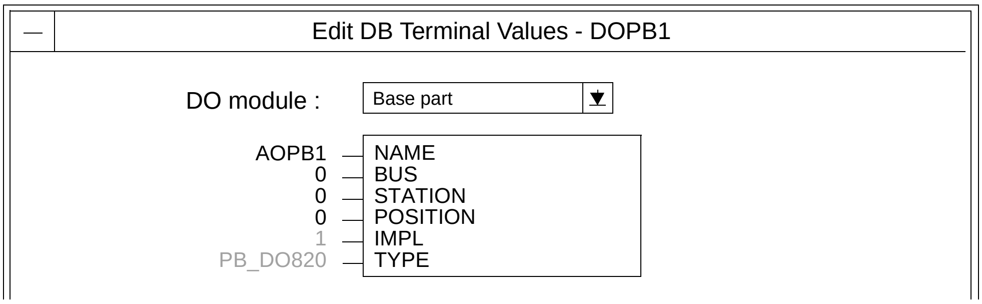
By means of the call name an Engineering Station will create:

- 1 data base element of type DO module
- 8 (PB_DO820) data base elements of type Digital Output.

Overview



Base part

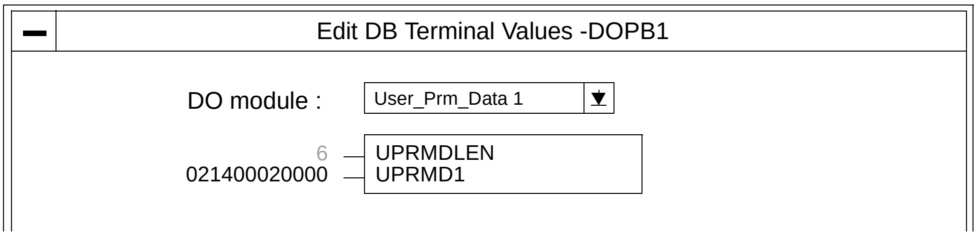


AOPB1 — NAME
0 — BUS
0 — STATION
0 — POSITION
1 — IMPL
PB_DO820 — TYPE

Terminal Description, Base Part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	DOPBx	–	Unique **NAME** of the I/O module.	Max. 20 characters.
BUS	user	0	–	**BUS** number.	See Section Address terminals Chapter Introduction.
STATION	user	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	For compatibility reasons only.
TYPE	predef	PB_DO820	–	Module **TYPE** designation.	–

User_Prm_Data 1


Edit DB Terminal Values -DOPB1

DO module : User_Prm_Data 1

6 — UPRMDLEN
021400020000 — UPRMD1

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
UPRMDLEN	predef	6	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
UPRMD1	user	021400020000	–	**U**ser **P**a**R**a**M**eter **D**ata, 6 bytes.	Hexadecimal number. See Table 67. For parameter definitions see Table 66

Table 66. Parameter Definition for PB_DO820

Configuration Parameter	Values	Location	Associated to
OSP control channel #	0 = keep current value 1 = set OSP value upon loss of communication	Byte 5, bit 0 Byte 5, bit 1 … Byte 5, bit 7	Channel 1 Channel 2 Channel 8
OSP time-out	0 = OSP time-out off 1 = OSP time-out 256 ms	Byte 4, bit 0	Module
OSP value channel #	0 or 1	Byte 6, bit 0 Byte 6, bit 1 … Byte 6, bit 7	Channel 1 Channel 2 Channel 8
Sensor power supervision	0 = power supervision off 1 = power supervision on	Byte 4, bit 1	Module

Table 67 includes the hexadecimal values for configuration parameters which can be entered for each channel. The default values is marked bold.

Table 67. User Parameter Definition for PB_DO820, Description of Bytes

Byte Number	**UPRMD**	**OSP time-out**	**Sensor power supervision**	**OSP Control Channel**	**OSP value Channel**	**Associated to**
1–3	021400					Module
4	00	Off	Off			Module
	01	256 ms	Off			
	02	Off	On			
	03	256 ms	On			
5 bit 0–3	0			Channel 1–4: Keep current value.		Channel 1–4
	1			Channel 1: Set OSP value upon loss of communication. Channel 2–4: Keep current value.		
	2			Channel 1, 3–4: Keep current value. Channel 2: Set OSP value upon loss of communication.		
	3			Channel 1–2: Set OSP value upon loss of communication. Channel 3–4: Keep current value.		
	4			Channel 1–2, 4: Keep current value. Channel 3: Set OSP value upon loss of communication.		
	5			Channel 1+3: Set OSP value upon loss of communication. Channel 2+4: Keep current value.		
	6			Channel 1+4: Keep current value. Channel 2–3: Set OSP value upon loss of communication.		

Table 67. User Parameter Definition for PB_DO820, Description of Bytes (Continued)

Byte Number	**UPRMD**	**OSP time-out**	**Sensor power supervision**	**OSP Control Channel**	**OSP value Channel**	**Associated to**
5 bit 0–3 (continued)	7			Channel 1–3: Set OSP value upon loss of communication. Channel 4: Keep current value.		Channel 1–4 (continued)
	8			Channel 1–3: Keep current value. Channel 4: Set OSP value upon loss of communication.		
	9			Channel 1+4: Set OSP value upon loss of communication. Channel 2–3: Keep current value.		
	A			Channel 1+3: Keep current value. Channel 2+4: Set OSP value upon loss of communication.		
	B			Channel 1–2, 4: Set OSP value upon loss of communication. Channel 3: Keep current value.		
	C			Channel 1–2: Keep current value. Channel 3–4: Set OSP value upon loss of communication.		
	D			Channel 1, 3–4: Set OSP value upon loss of communication. Channel 2: Keep current value.		
	E			Channel 1: Keep current value. Channel 2–4: Set OSP value upon loss of communication.		
	F			Channel 1–4: Set OSP value upon loss of communication.		

Table 67. User Parameter Definition for PB_DO820, Description of Bytes (Continued)

Byte Number	**UPRMD**	**OSP time-out**	**Sensor power supervision**	**OSP Control Channel**	**OSP value Channel**	**Associated to**
5 bit 4–7	0			Channel 5–8: Keep current value.		Channel 5–8
	…			…		
	F			Channel 5–8: Set OSP value upon loss of communication.		
6 bit 0–3	0				Channel 1–4: 0	Channel 1–4
	1				Channel 1: 1 Channel 2–4: 0	
	2				Channel 1, 3–4: 0 Channel 2: 1	
	3				Channel 1+2: 1 Channel 3+4: 0	
	4				Channel 1–2, 4: 0 Channel 3: 1	
	5				Channel 1+3: 1 Channel 2+4: 0	
	6				Channel 1+4: 0 Channel 2–3: 1	
	7				Channel 1–3: 1 Channel 4: 0	
	8				Channel 1–3: 0 Channel 4: 1	
	9				Channel 1+4: 1 Channel 2–3: 0	
	A				Channel 1+3: 0 Channel 2+4: 1	
	B				Channel 1, 2+4: 1 Channel 3: 0	
	C				Channel 1+2: 0 Channel 3+4: 1	
	D				Channel 1, 3+4: 1 Channel 2: 0	
	E				Channel 1: 0 Channel 2–4: 1	
	F				Channel 1–4: 1	

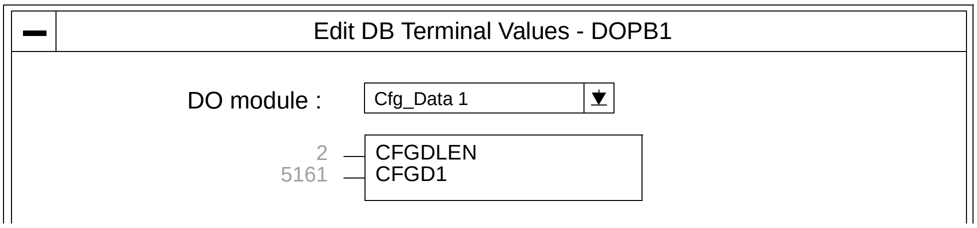
Table 67. User Parameter Definition for PB_DO820, Description of Bytes (Continued)

Byte Number	**UPRMD**	**OSP time-out**	**Sensor power supervision**	**OSP Control Channel**	**OSP value Channel**	**Associated to**
7 bit 4–7	0			Channel 5–8: Keep current value.		Channel 5–8
	…			…		
	F			Channel 5–8: Set OSP value upon loss of communication.		

NOTE

Do not use other values for UPRMD than stated in Table 67.

Cfg_Data 1



Edit DB Terminal Values - DOPB1

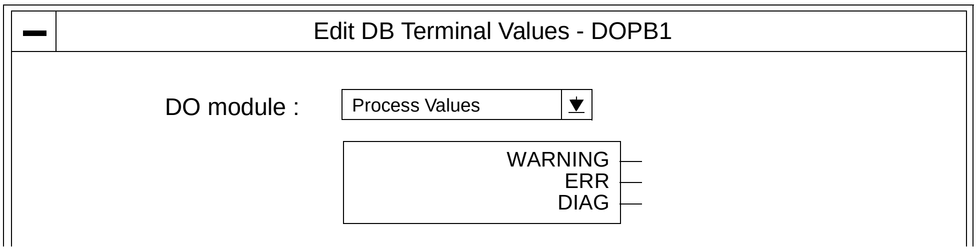
DO module : Cfg_Data 1

2 — CFGDLEN
5161 — CFGD1

Terminal Description, Cfg_Data 1

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
CFGDLEN	predef	2	–	**C**on**F**i**G** **D**ata **LEN**gth. Predefined value for every module.	–
CFGD1	predef	5161	–	**C**on**F**i**G**uration **D**ata, 2bytes. Predefined value for every module.	–

Process Values



Edit DB Terminal Values - DOPB1

DO module : Process Values

WARNING
ERR
DIAG

Terminal Description, Process Values

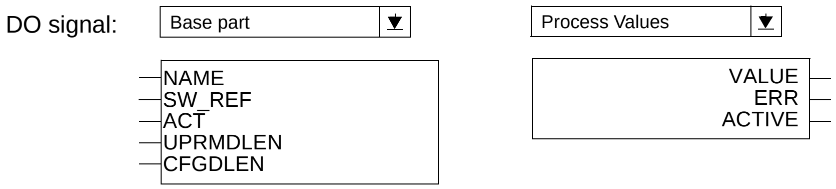
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
WARNING	system	–	B(r)	**WARNING** indicates a non-fatal error.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
DIAG	system	–	I(r)	**DIAG**nostics.	See the table “DIAG (I/O modules)” in Introduction

Digital Output PB_DO820S

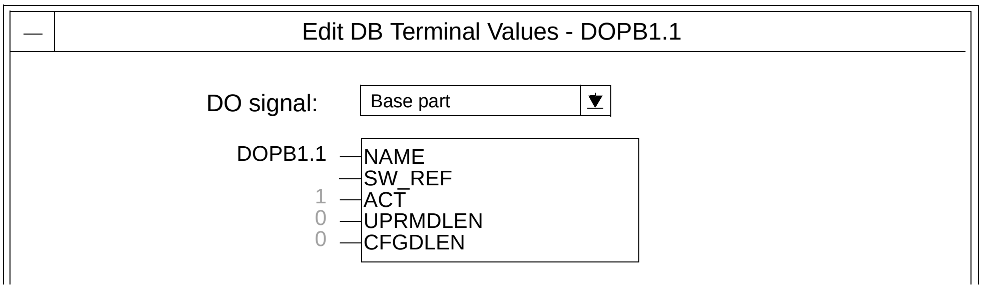
Summary

The data base element Digital Input is subordinate to the AI module data base element specifying an DO820 hardware module.

Overview



Base part

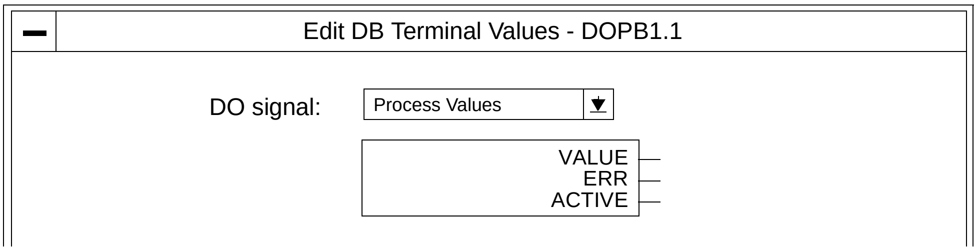


DOPB1.1 NAME
SW_REF
1 ACT
0 UPRMDLEN
0 CFGDLEN

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
NAME	user	DOPBx.y	–	Unique **NAME** of the I/O signal.	Max. 20 characters.
SW_REF	system	*	–	Backward **REF**erence to an AIS data base element.	Not used.
ACT	predef	1	–	Channel is: 0=spare 1=**ACT**ive	For compatibility reason only.
UPRMDLEN	predef	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	–
CFGDLEN	predef	0	–	**C**on**F**i**G** **D**ata **LEN**gth.	–

Process Values



Edit DB Terminal Values - DOPB1.1

DO signal: Process Values

Terminal Description, Process Values

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE	system	–	R(r)	Signal **VALUE**.	–
ERR	system	–	B(r)	**ERR**or indicates fatal errors, such as configuration errors or hardware errors.	–
ACTIVE	system	–	B(r/w)	**ACTIV**at**E** Signal.	–

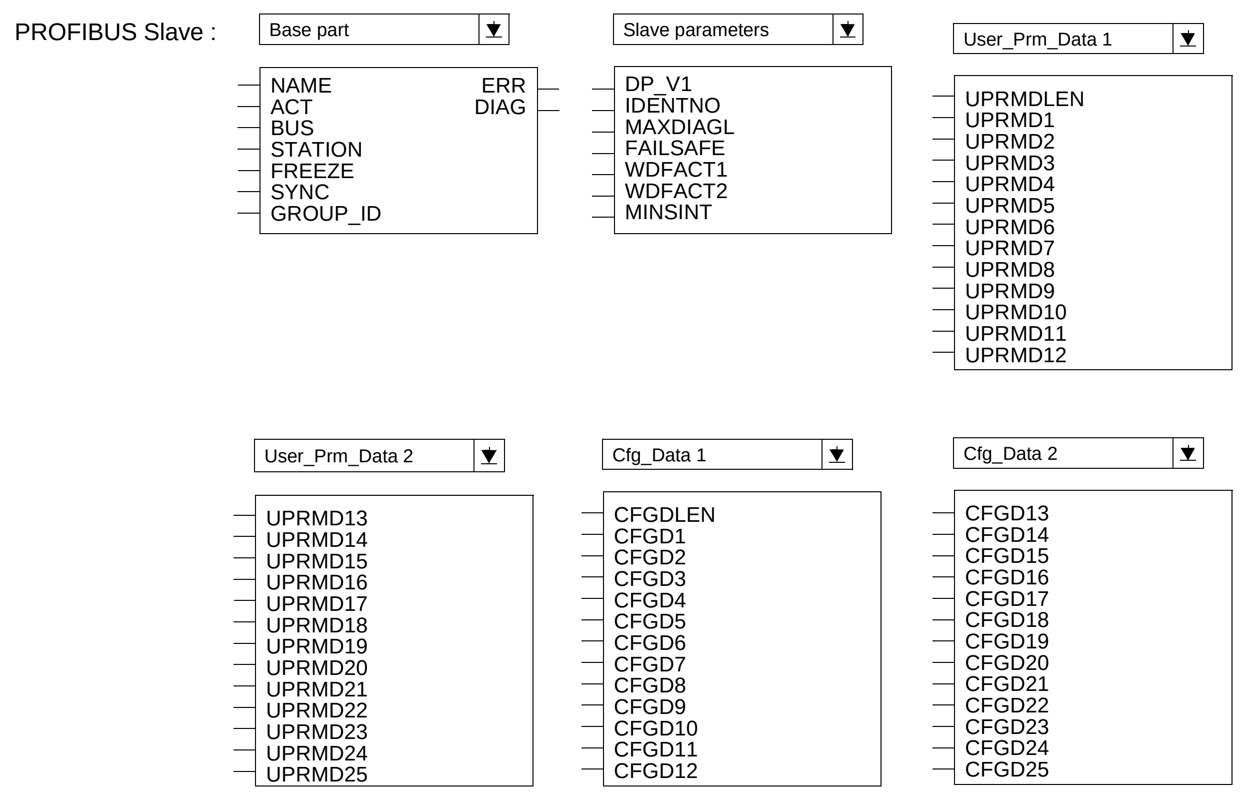
PROFIBUS Slave PBS

Summary

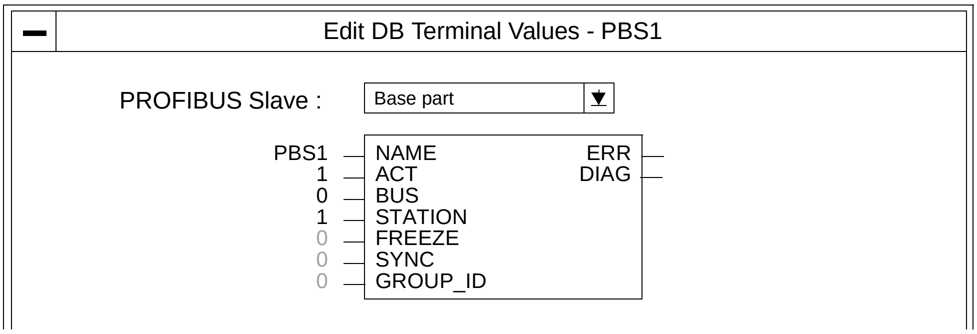
The PROFIBUS Slave data base element describes a PROFIBUS-DP slave device.

Every PROFIBUS slave device is mapped to a data base element which contain configuration data and diagnostic information.

Overview



Base part



Edit DB Terminal Values - PBS1

PROFIBUS Slave : Base part

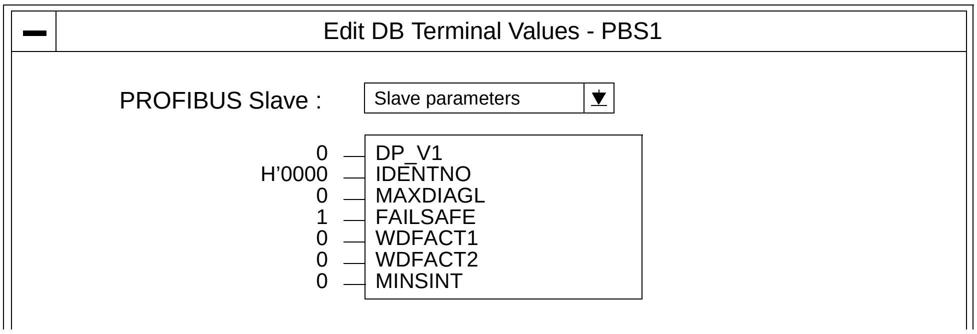
PBS1 — NAME
1 — ACT
0 — BUS
1 — STATION
0 — FREEZE
0 — SYNC
0 — GROUP_ID
ERR —
DIAG —

Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PBSx	–	Unique module **NAME**.	Max. 20 characters.
ACT	user	1	–	The DB element is: 0=spare 1=**ACT**ive	–
BUS	user	–	–	Unique **BUS** number of the PROFIBUS.	Range 0–255(1)
STATION	user	1	–	**STATION** number representing the slave on the PROFIBUS.	Range 0–125
FREEZE	predef	0	B(r/w)	**FREEZE** PROFIBUS slave.	Not supported in this version.
SYNC	predef	0	B(r/w)	**SYNC**hronize PROFIBUS slave.	Not supported in this version.
GROUP_ID	predef	0	–	**GROUP ID** of PROFIBUS slave.	GROUP ID for the FREEZE and SYNC functions. Not supported in this version.
ERR	system	0	B(r)	**ERR**or flag indicating the PROFIBUS slave status (the status error bits of the slave station are logically or-ed to the flag).	–
DIAG	system	0	B(r)	**DIAG**nostic changed flag for PROFIBUS station.	–

(1) BUS number 0 cannot be used in conjunction with STATION number 0.

Slave parameters



Edit DB Terminal Values - PBS1

PROFIBUS Slave : Slave parameters

0 — DP_V1
H’0000 — IDENTNO
0 — MAXDIAGL
1 — FAILSAFE
0 — WDFACT1
0 — WDFACT2
0 — MINSINT

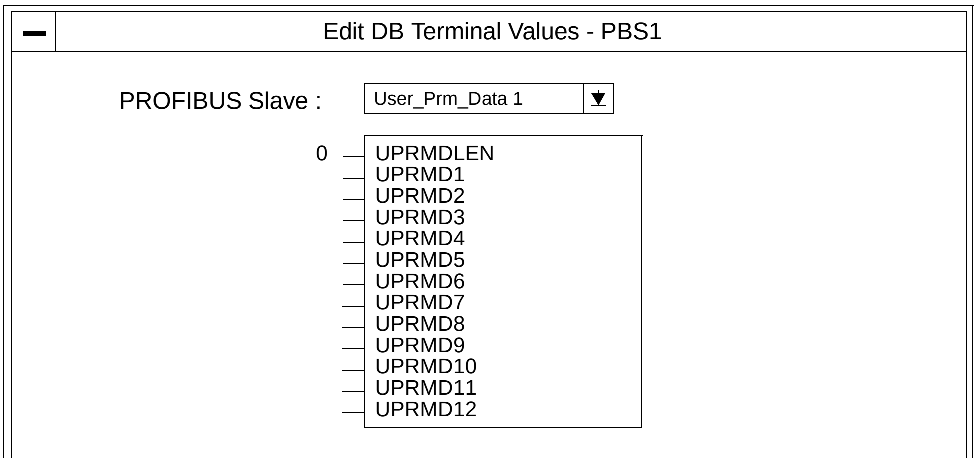
Terminal Description, Slave parameters

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DP_V1	GSD/user	0	–	PROFIBUS slave uses **DP**/**V1** (=DP/E) functionality: 0=DP-slave CFG data of EN50170 1=DP-slave CFG data of DPV1.	GSD keyword: DPV1_Slave.
IDENTNO	GSD/user	H’0000	–	Unique PROFIBUS slave **IDENT**ifier. Assigned by PNO.	H’0000–H’FFFF. GSD keyword: Ident_Number.
MAXDIAGL	GSD/user	32	–	**MAX**imum **DIAG**nostic data **L**ength.	Range 6–236. GSD keyword: Max_Diag_Data_Len.
FAILSAFE	GSD/user	0	–	**FAILSAFE** capability: 0= The master sends output data with zero length 1= The master sends output data with all outputs set to zero	GSD keyword: Fail_Safe.
WDFACT1	user	0	–	**W**atch **D**og **FACT**or **1**.	Range 0–255. After expiration of timer the slave sets outputs to 0.(1)
WDFACT2	user	0	–	**W**atch **D**og **FACT**or **2**.	
MINSINT	GSD/user	0	–	**MIN**imum **S**lave **INT**erval. Minimum time between two poll cycles (0–65535 × 0.1ms).	Range 0–65535(2). GSD keyword: Min_Slave_Interval.

(1) Slave supervision of connection with time out T_{WD} = WDFACT1 × WDFACT2 × 10ms. No supervision if WDFACT1 = WDFACT2 = 0.

(2) If baudrate 12 Megabaud is used, values > 178 should be avoided.

User_Prm_Data 1



Edit DB Terminal Values - PBS1

PROFIBUS Slave : User_Prm_Data 1

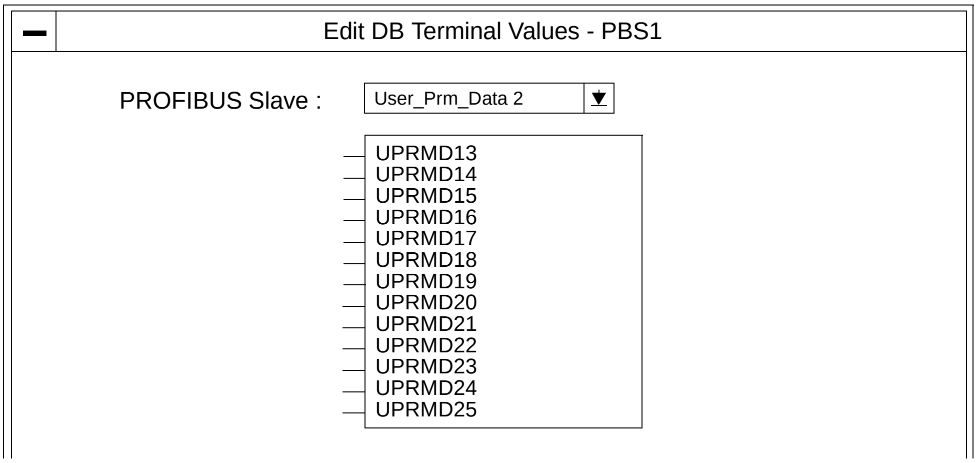
0 UPRMDLEN
UPRMD1
UPRMD2
UPRMD3
UPRMD4
UPRMD5
UPRMD6
UPRMD7
UPRMD8
UPRMD9
UPRMD10
UPRMD11
UPRMD12

Terminal Description, User_Prm_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMDLEN	GSD/user	0	–	**U**ser **P**a**R**a**M**eter **D**ata **LEN**gth.	Range 0–217 (1). GSD keyword: User_Prm_Data_Len.
UPRMD1	GSD/user		–	**U**ser **P**a**R**a**M**eter **D**ata, **1**st 10 bytes.	20 character string representing a hexadecimal number. GSD keyword: User_Prm_Data.
UPRMD2	GSD/user		–	**U**ser **P**a**R**a**M**eter **D**ata, **2**nd 10 bytes.	
:	:	:	:	:	
UPRMD12	GSD/user		–	**U**ser **P**a**R**a**M**eter **D**ata, **12**th 10 bytes.	

(1) UPRMDLEN + CFGDLEN ≤ 217.

User_Prm_Data 2



Edit DB Terminal Values - PBS1

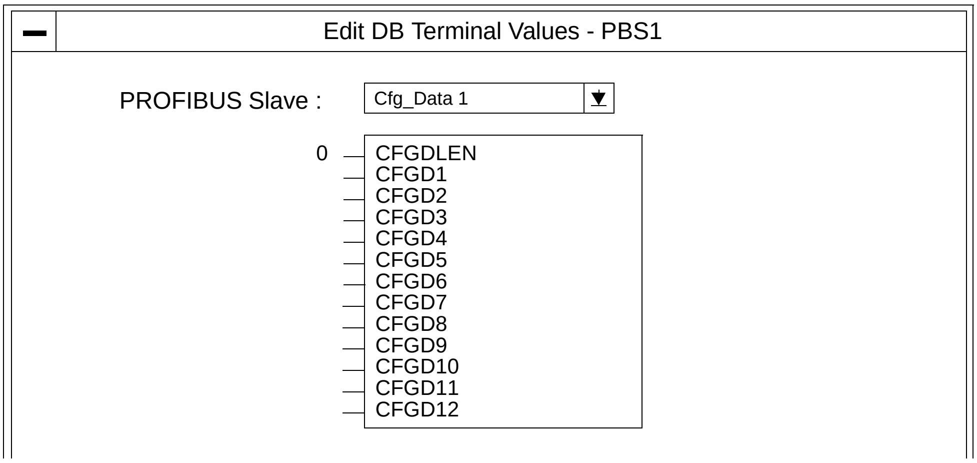
PROFIBUS Slave : User_Prm_Data 2

UPRMD13
UPRMD14
UPRMD15
UPRMD16
UPRMD17
UPRMD18
UPRMD19
UPRMD20
UPRMD21
UPRMD22
UPRMD23
UPRMD24
UPRMD25

Terminal Description, User_Prm_Data 2

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
UPRMD13	GSD/user		–	**U**ser **P**a**R**a**M**eter **D**ata, **13**th 10 bytes.	20 character string representing a hexadecimal number. GSD keyword: User_Prm_Data.
UPRMD14	GSD/user		–	**U**ser **P**a**R**a**M**eter **D**ata, **14**th 10 bytes.	
:	:	:	:	:	
UPRMD25	GSD/user		–	**U**ser **P**a**R**a**M**eter **D**ata, **25**th 10 bytes.	

Cfg_Data 1



Edit DB Terminal Values - PBS1

PROFIBUS Slave : Cfg_Data 1

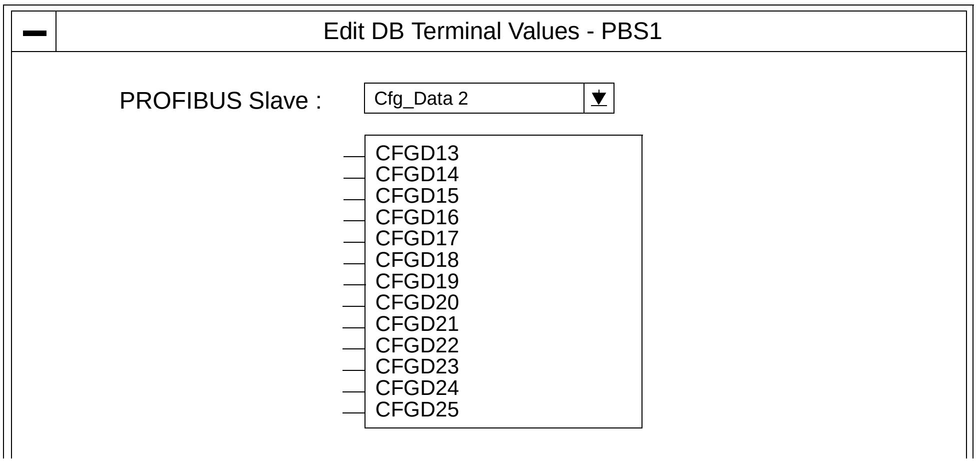
0 CFGDLEN
CFGD1
CFGD2
CFGD3
CFGD4
CFGD5
CFGD6
CFGD7
CFGD8
CFGD9
CFGD10
CFGD11
CFGD12

Terminal Description, Cfg_Data 1

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
CFGDLEN	GSD/user	0	–	**C**on**F**i**G** **D**ata **LEN**gth. Must be calculated from the actual configuration.	Range 0–217 (1). GSD keyword: Module. (Can be several for modular devices)
CFGD1	GSD/user		–	**C**on**Fi**G**uration **D**ata, **1**st 10 bytes.	20 character string representing a hexadecimal number. GSD keyword: Module.
CFGD2	GSD/user		–	**C**on**Fi****G**uration **D**ata, **2**nd 10 bytes.	
:	:	:	:	:	
CFGD12	GSD/user		–	**C**on**Fi****G**uration **D**ata, **12**th 10 bytes.	

(1) UPRMDLEN + CFGDLEN ≤ 217.

Cfg_Data 2



Edit DB Terminal Values - PBS1

PROFIBUS Slave : Cfg_Data 2

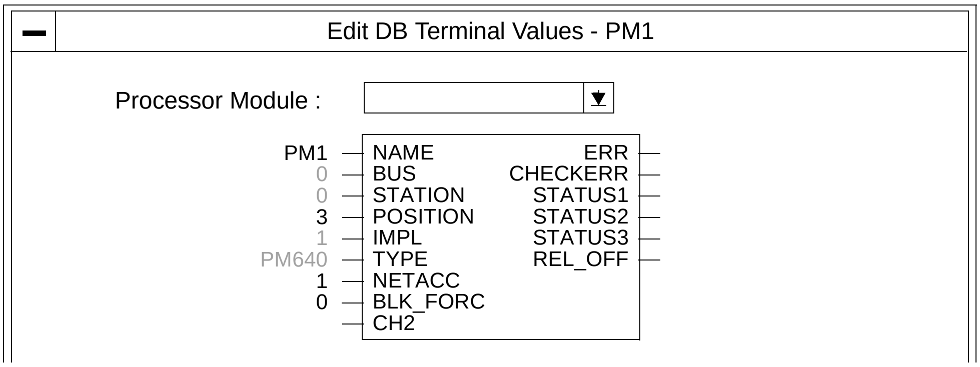
Terminal Description, Cfg_Data 2

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CFGD13	GSD/user		–	**C**on**Fi**g**G**uration **D**ata, **13**th 10 bytes.	20 character string representing a hexadecimal number. GSD keyword: Module.
CFGD14	GSD/user		–	**C**on**Fi**g**G**uration **D**ata, **14**th 10 bytes.	
:	:	:	:	:	
CFGD25	GSD/user		–	**C**on**Fi**g**G**uration **D**ata, **25**th 10 bytes.	

Processor Module PM640

Summary

PM640 is the Processor Module (CPU) of Advant Controller 160 suitable for standard applications.



Edit DB Terminal Values - PM1

Processor Module :

PM1 — NAME
0 — BUS
0 — STATION
3 — POSITION
1 — IMPL
PM640 — TYPE
1 — NETACC
0 — BLK_FORC
— CH2

ERR —
CHECKERR —
STATUS1 —
STATUS2 —
STATUS3 —
REL_OFF —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PMx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See section “Address terminals” in chapter Introduction. POSITION range 3–8
STATION	predef	0	–	**STATION** number.	
POSITION	user	3	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	PM640	–	Module **TYPE**.	See call name.
NETACC	user	1	–	**NET**work **ACC**ess of the engineering tool 0=blocked 1=allowed	–
BLK_FORC	user	0	–	**BL**oc**K**ing “**FORC**e Value” of the engineering tool 0=deblocked 1=blocked	–
CH2	user	*	–	Reference to MODCHAN data base element.	–

Terminal Description (Continued)

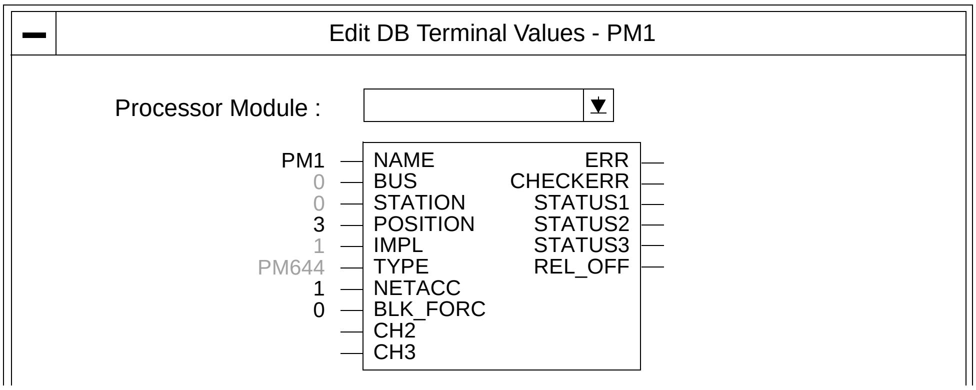
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–
CHECKERR	system	–	B(r)	**CHECK**sum **ERR**or on PROM. 0=no checksum error 1=checksum error	–
STATUS1	system	–	IL(r)	**STATUS 1**. Status and error information.	See Section STATUS1 Terminal of the Processor Module Data Base Elements in Chapter Introduction.
STATUS2	system	–	IL(r)	**STATUS 2**. Data base version date.	–
STATUS3	system	–	IL(r)	**STATUS 3**. Data base version time	–
REL_OFF	system	–	B(r/w)	Forces the **REL**ay to dropout (**OFF**)	–

Processor Module PM644

Summary

PM644 is the Processor Module (CPU) of Advant Controller 160 equipped with a PROFIBUS interface.

The PROFIBUS interface data base elements must be created separately.



Edit DB Terminal Values - PM1

Processor Module :

PM1 — NAME
0 — BUS
0 — STATION
3 — POSITION
1 — IMPL
PM644 — TYPE
1 — NETACC
0 — BLK_FORC
— CH2
— CH3

ERR —
CHECKERR —
STATUS1 —
STATUS2 —
STATUS3 —
REL_OFF —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PMx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals Chapter Introduction. POSITION range 3–8.
STATION	predef	0	–	**STATION** number.	
POSITION	user	3	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	PM644	–	Module **TYPE**.	See call name.
NETACC	user	1	–	**NET**work **ACC**ess of the engineering tool 0=blocked 1=allowed	–
BLK_FORC	user	0	–	**BL**oc**K**ing “**FORC**e Value” of the engineering tool 0=deblocked 1=blocked	–
CH2	user	*	–	Reference to MODCHAN data base element.	–

Terminal Description (Continued)

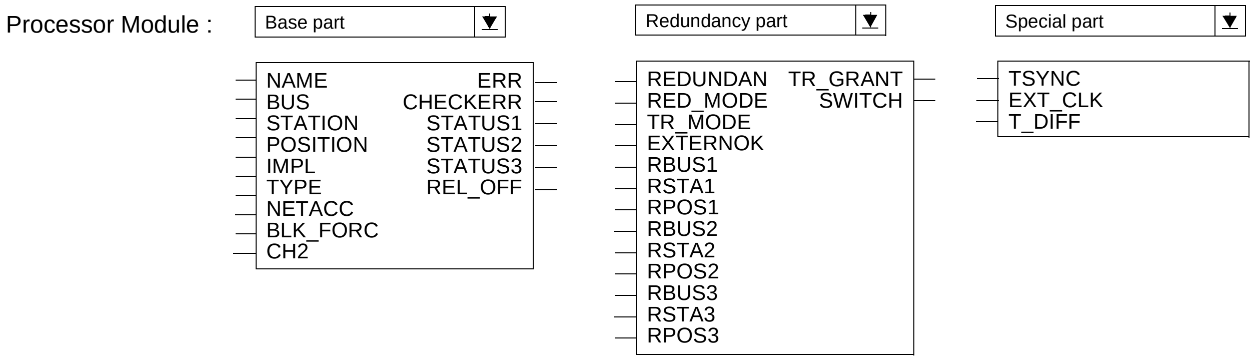
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
CH3	user	*	–	Reference to PROFIBUS-DP data base element.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–
CHECKERR	system	–	B(r)	**CHECK**sum **ERR**or on PROM. 0=no checksum error 1=checksum error	–
STATUS1	system	–	IL(r)	**STATUS 1**. Status and error information.	See Section STATUS1 Terminal of the Processor Module Data Base Elements in Chapter Introduction.
STATUS2	system	–	IL(r)	**STATUS 2**. Data base version date.	–
STATUS3	system	–	IL(r)	**STATUS 3**. Data base version time.	–
REL_OFF	system	–	B(r/w)	Forces the **REL**ay to dropout (**OFF**).	–

Processor Module PM645

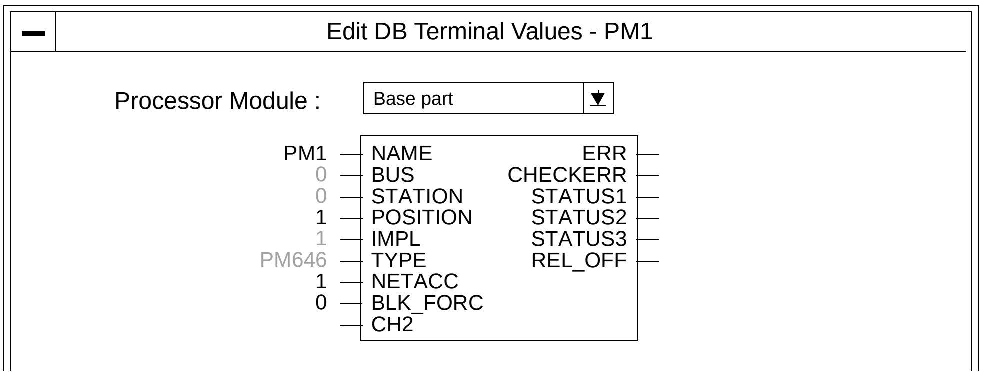
Summary

PM645 is the Processor Module (CPU) of Advant Controller 160 for general redundancy applications.

Overview



Base part



Processor Module : Base part

PM1 — NAME
0 — BUS
0 — STATION
1 — POSITION
1 — IMPL
PM646 — TYPE
1 — NETACC
0 — BLK_FORC
— CH2

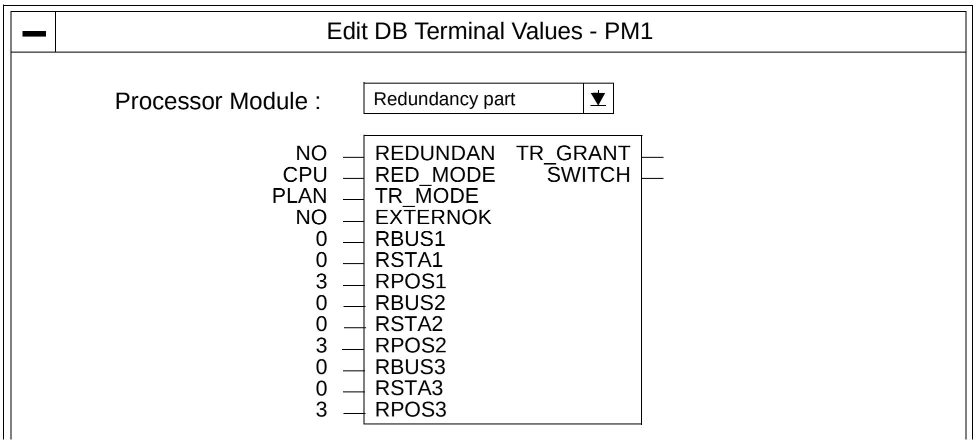
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PMx	–	Unique module **NAME**.	Max. 20 characters.

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
BUS	predef	0	–	**BUS** number.	See Section Address terminals Chapter Introduction. POSITION range 3–8
STATION	predef	0	–	**STATION** number.	
POSITION	user	3	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	PM645	–	Module **TYPE**.	See call name.
NETACC	user	1	–	**NET**work **ACC**ess of the engineering tool 0=blocked 1=allowed	–
BLK_FORC	user	0	–	**BL**oc**K**ing “**FORC**e Value” of the engineering tool 0=deblocked 1=blocked	–
CH2	user	*	–	Reference to MODCHAN data base element.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–
CHECKERR	system	–	B(r)	**CHECK**sum **ERR**or on PROM. 0=no checksum error 1=checksum error	–
STATUS1	system	–	IL(r)	**STATUS 1**. Status and error information.	See Section STATUS1 Terminal of the Processor Module Data Base Elements in Chapter Introduction.
STATUS2	system	–	IL(r)	**STATUS 2**. Data base version date.	–
STATUS3	system	–	IL(r)	**STATUS 3**. Data base version time.	–
REL_OFF	system	–	B(r/w)	Forces the **REL**ay to dropout (**OFF**).	–

Redundancy part



NO — REDUNDAN
CPU — RED_MODE
PLAN — TR_MODE
NO — EXTERNOK
0 — RBUS1
0 — RSTA1
3 — RPOS1
0 — RBUS2
0 — RSTA2
3 — RPOS2
0 — RBUS3
0 — RSTA3
3 — RPOS3

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
REDUNDAN	user	NO	–	**REDUNDAN**cy. Values: NO, YES.	See Table 68. Not allowed to change on-line.
RED_MODE	user	CPU	–	**RED**undancy **MODE**. Values: CPU, STATION.	
TR_MODE	user	PLAN	–	**TR**acking **MODE**. Values: UNPLAN, PLAN.	
EXTERNOK	user	NO	–	Monitoring of **EXTERN**al devices. Values: NO = disabled, YES = enabled	Not allowed to change on-line.
RBUS1	user	0	–	**R**emote **BUS 1** (redundancy switch = 1).	Range 0–255
RSTA1	user	0	–	**R**emote **STA**tion **1** (redundancy switch = 1).	Range 0–255
RPOS1	user	3	–	**R**emote **POS**ition **1** of module (redundancy switch = 1).	Range 3–8
RBUS2	user	0	–	**R**emote **BUS 2** (redundancy switch = 2).	Range 0–255
RSTA2	user	0	–	**R**emote **STA**tion **2** (redundancy switch = 2).	Range 0–255
RPOS2	user	3	–	**R**emote **POS**ition **2** of module (redundancy switch = 2).	Range 3–8
RBUS3	user	0	–	**R**emote **BUS 3** (redundancy switch = 3).	Range 0–255
RSTA3	user	0	–	**R**emote **STA**tion **3** (redundancy switch = 3).	Range 0–255
RPOS3	user	3	–	**R**emote **POS**ition **3** of module (redundancy switch = 3).	Range 3–8

Terminal Description (Continued)

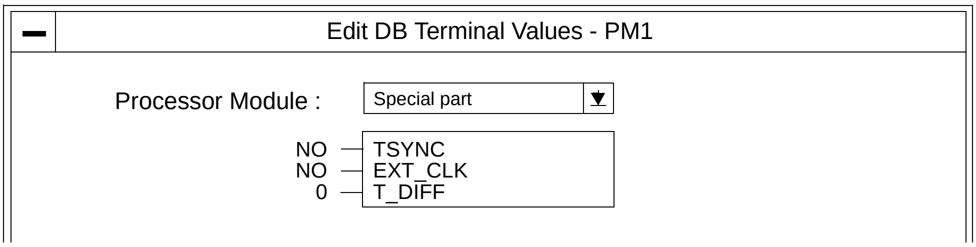
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
TR_GRANT	system	–	B(r)	**TR**acking **GRANT**ed.	–
SWITCH	system	–	B(r)	**SWITCH** that forces redundancy in state defective.	–

Terminals REDUNDAN, RED_MODE, TR_MODE

Table 68. Terminals REDUNDAN, RED_MODE, TR_MODE

REDUNDAN	RED_MODE	TR_MODE	High Speed Link	Check Cycle Time
NO	–	UNPLAN	No	No
NO	–	PLAN	Yes	No
YES	STATION	UNPLAN	*Combination not allowed*.	
YES	STATION	PLAN	*Combination not allowed*.	
YES	CPU	UNPLAN	Yes	No
YES	CPU	PLAN	Yes	No

Special part



Edit DB Terminal Values - PM1

Processor Module : Special part

NO — TSYNC
NO — EXT_CLK
0 — T_DIFF

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
TSYNC	user	NO	–	**T**ime **SYNC**hronization YES = enabled. NO = not enabled.	See Table 69.
EXT_CLK	user	NO	–	**EXT**ernal **CL**oc**K**. YES = Use external clock. NO = No external clock.	
T_DIFF	user	0	–	**T**ime **DIFF**erence to UTC.	Range -23 to +23h.

Terminals TSYNC and EXT_CLK

Table 69. Terminals TSYNC and EXT_CLK

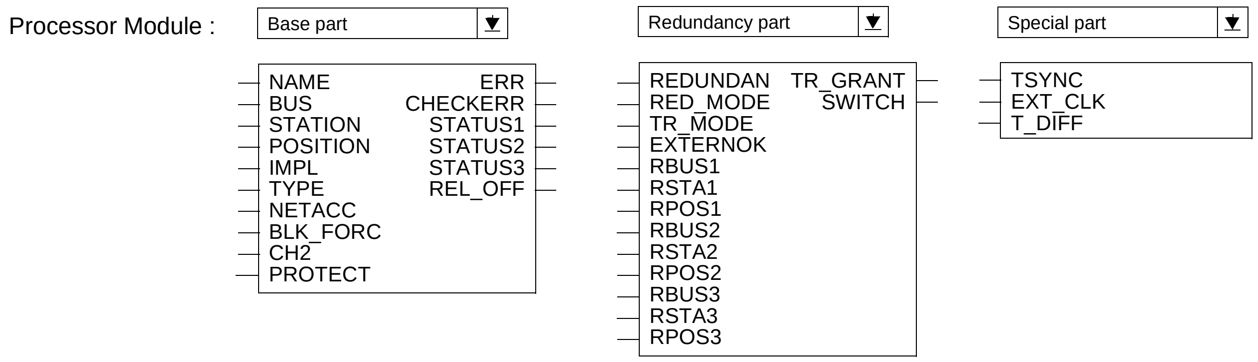
TSYNC	EXT_CLK	Description
NO	NO	No external time synchronization.
YES	NO	External time synchronization via minute pulse from I/O port pin 4.
YES	YES	Use DCF77 external clock connected at Com B.
NO	YES	*Combination not allowed.*

Processor Module PM646

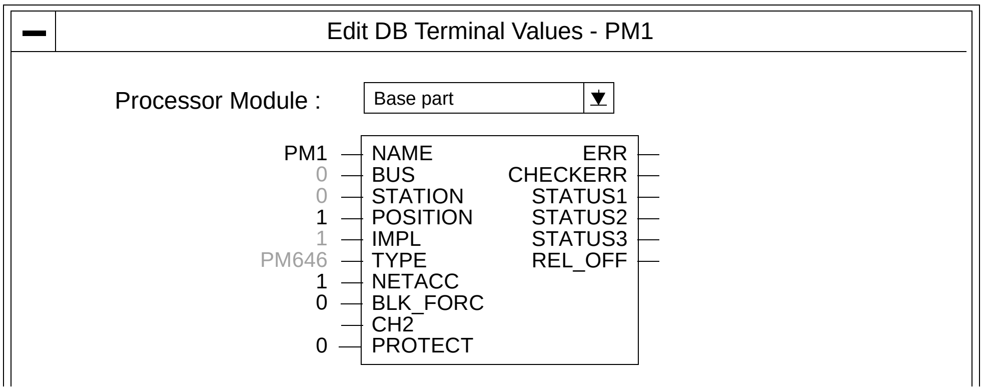
Summary

PM646 is the Processor Module (CPU) of Advant Controller 160 for protection system and safety applications.

Overview



Base part



Processor Module : Base part

PM1 NAME ERR
0 BUS CHECKERR
0 STATION STATUS1
1 POSITION STATUS2
1 IMPL STATUS3
PM646 TYPE REL_OFF
1 NETACC
0 BLK_FORC
CH2
0 PROTECT

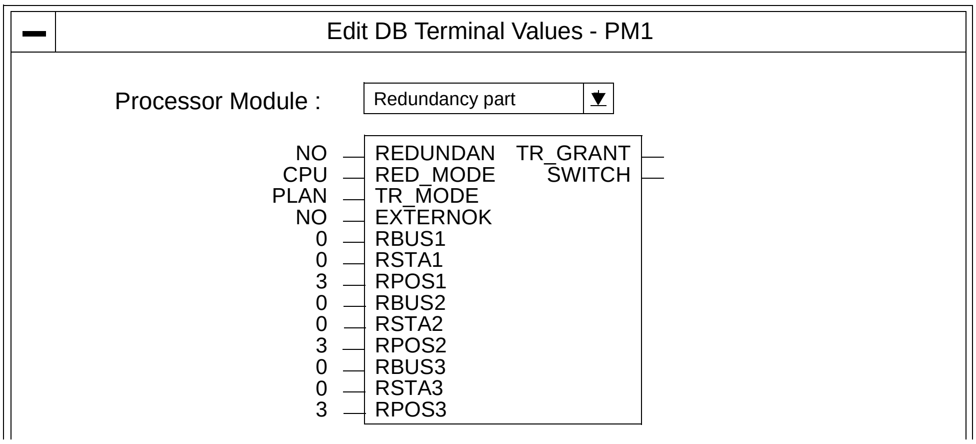
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PMx	–	Unique module **NAME**.	Max. 20 characters.

Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
BUS	predef	0	–	**BUS** number.	See Section Address terminals Chapter Introduction. POSITION range 3 to 8.
STATION	predef	0	–	**STATION** number.	
POSITION	user	3	–	**POSITION** of the module.	
IMPL	predef	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	PM646	–	Module **TYPE**.	See call name.
NETACC	user	1	–	**NET**work **ACC**ess of the engineering tool 0=blocked 1=allowed	–
BLK_FORC	user	0	–	**BL**oc**K**ing “**FORC**e Value” of the engineering tool 0=deblocked 1=blocked	–
CH2	user	*	–	Reference to MODCHAN data base element.	–
PROTECT	user	0	–	Monitoring for 2oo3-**PROTECT**ion system 0=disabled 1=enabled	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–
CHECKERR	system	–	B(r)	**CHECK**sum **ERR**or on PROM. 0=no checksum error 1=checksum error	–
STATUS1	system	–	IL(r)	**STATUS 1**. Status and error information.	See Section STATUS1 Terminal of the Processor Module Data Base Elements in Chapter Introduction.
STATUS2	system	–	IL(r)	**STATUS 2**. Data base version date.	–
STATUS3	system	–	IL(r)	**STATUS 3**. Data base version time.	–
REL_OFF	system	–	B(r/w)	Forces the **REL**ay to dropout (**OFF**).	–

Redundancy part



Edit DB Terminal Values - PM1

Processor Module : Redundancy part

NO — REDUNDAN
CPU — RED_MODE
PLAN — TR_MODE
NO — EXTERNOK
0 — RBUS1
0 — RSTA1
3 — RPOS1
0 — RBUS2
0 — RSTA2
3 — RPOS2
0 — RBUS3
0 — RSTA3
3 — RPOS3

TR_GRANT —
SWITCH —

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
REDUNDAN	user	NO	–	**REDUNDAN**cy. Values: NO, YES.	See Table 70. Not allowed to change on-line.
RED_MODE	user	CPU	–	**RED**undancy **MODE**. Values: CPU, STATION.	
TR_MODE	user	PLAN	–	**TR**acking **MODE**. Values: UNPLAN, PLAN.	
EXTERNOK	user	NO	–	Monitoring of **EXTERN**al devices. Values: NO = disabled, YES = enabled	Not allowed to change on-line.
RBUS1	user	0	–	**R**emote **BUS 1** (redundancy switch = 1).	Range 0–255
RSTA1	user	0	–	**R**emote **STA**tion **1** (redundancy switch = 1).	Range 0–255
RPOS1	user	3	–	**R**emote **POS**ition **1** of module (redundancy switch = 1).	Range 3–8
RBUS2	user	0	–	**R**emote **BUS 2** (redundancy switch = 2).	Range 0–255
RSTA2	user	0	–	**R**emote **STA**tion **2** (redundancy switch = 2).	Range 0–255
RPOS2	user	3	–	**R**emote **POS**ition **2** of module (redundancy switch = 2).	Range 3–8
RBUS3	user	0	–	**R**emote **BUS 3** (redundancy switch = 3).	Range 0–255
RSTA3	user	0	–	**R**emote **STA**tion **3** (redundancy switch = 3).	Range 0–255
RPOS3	user	3	–	**R**emote **POS**ition **3** of module (redundancy switch = 3).	Range 3–8

Terminal Description (Continued)

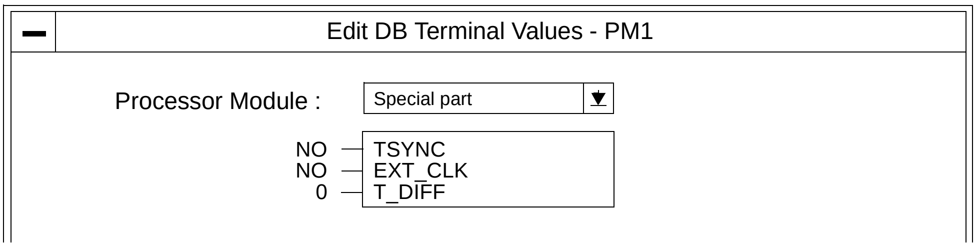
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
TR_GRANT	system	–	B(r)	**TR**acking **GRANT**ed.	–
SWITCH	system	–	B(r)	**SWITCH** that forces redundancy in state defective.	–

Terminals REDUNDAN, RED_MODE, TR_MODE

Table 70. Terminals REDUNDAN, RED_MODE, TR_MODE

REDUNDAN	RED_MODE	TR_MODE	High Speed Link	Check Cycle Time
NO	–	UNPLAN	No	No
NO	–	PLAN	Yes	No
YES	STATION	UNPLAN	*Combination not allowed*.	
YES	STATION	PLAN	*Combination not allowed*.	
YES	CPU	UNPLAN	Yes	No
YES	CPU	PLAN	Yes	No

Special part



Processor Module : Special part

NO — TSYNC
NO — EXT_CLK
0 — T_DIFF

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
TSYNC	user	NO	–	**T**ime **SYNC**hronization YES = enabled. NO = not enabled.	See Table 71.
EXT_CLK	user	NO	–	**EXT**ernal **CL**oc**K**. YES = Use external clock. NO = No external clock.	
T_DIFF	user	0	–	**T**ime **DIFF**erence to UTC.	Range -23 to +23h.

Terminals TSYNC and EXT_CLK

Table 71. Terminals TSYNC and EXT_CLK

TSYNC	EXT_CLK	Description
NO	NO	No external time synchronization.
YES	NO	External time synchronization via minute pulse from I/O port pin 4.
YES	YES	Use DCF77 external clock connected at Com B.
NO	YES	*Combination not allowed.*

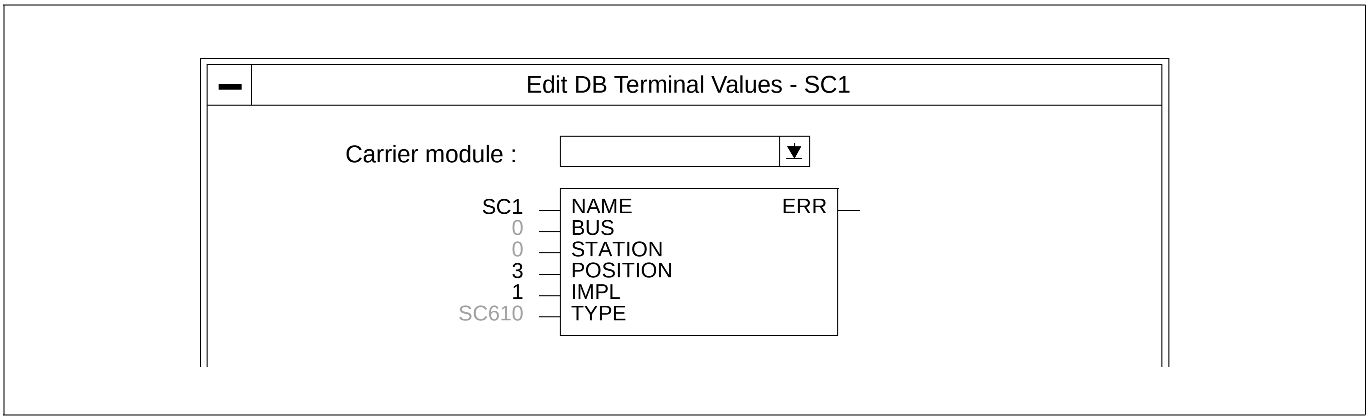
Carrier Module SC610

Summary

The data base element SC610 is a carrier module for up to two CI532 modules. SC610 cannot be used in case of a redundant pair of PM645 elements.

NOTE

Only 1 instance of this data base element can be created.



Edit DB Terminal Values - SC1

Carrier module :

SC1 — NAME
0 — BUS
0 — STATION
3 — POSITION
1 — IMPL
SC610 — TYPE
ERR —

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	SCx	–	Unique module **NAME**.	Max. 20 characters.
BUS	predef	0	–	**BUS** number.	See Section Address terminals Chapter Introduction.
STATION	predef	0	–	**STATION** number.	
POSITION	user	0	–	**POSITION** of the module.	
IMPL	user	1	–	**IMPL**emented. 0=the module is spare 1=the module is implemented	–
TYPE	predef	SC610	–	Module **TYPE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional module	–

3BDS 005 556R101

April 3, 2000